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                    GenCore version 5.1.4_p5_4578
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OM nucleic - nucleic search, using sw model

Run on:        April 4, 2003, 23:47:29 ; Search time 83 Seconds
                                          (without alignments)
                                          6384.788 Million cell updates/sec

Title:         US-09-847-081B-1
Perfect score: 1728
Sequence:      1 agaaaccagaaagaacaac........tcatcaaaccctcaagtgag 1728

Scoring table: IDENTITY_NUC
               Gapop 10.0 , Gapext 1.0

Searched:      441362 seqs, 153338381 residues

Total number of hits satisfying chosen parameters:    882724

Minimum DB seq length: 0
Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%
                 Maximum Match 100%
                 Listing first 45 summaries

Database :     Issued_Patents_NA:*
               1: /cgn2_6/ptodata/1/1na/5A_COMB.seq:*
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Pred. No. is the number of results predicted by chance to have a
score greater than or equal to the score of the result being printed,
and is derived by analysis of the total score distribution.
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SUMMARIES

	Result No.	Score	Query Match	Length	DB	ID	Description
	1	868	50.2	1826	1	US-08-579-667-5	Sequence 5, Appl
	2	858.6	49.7	1795	1	US-08-579-667-1	Sequence 1, Appl
	3	853.4	49.4	1814	1	US-08-579-667-7	Sequence 7, Appl
	4	842	48.7	1646	1	US-07-995-950-2	Sequence 2, Appl
	5	842	48.7	1646	1	US-08-300-582-2	Sequence 2, Appl
	6	811.2	46.9	1239	4	US-09-180-342-2	Sequence 2, Appl
	7	811.2	46.9	1316	1	US-08-579-667-3	Sequence 3, Appl
	8	415.2	24.0	1239	1	US-09-180-342-1	Sequence 1, Appl
	9	172	10.0	749	1	US-08-579-667-9	Sequence 9, Appl
c	10	54	3.1	7218	1	US-08-232-463-14	Sequence 14, Appl
	11	52.4	3.0	114	4	US-08-260-546-10	Sequence 10, Appl
	12	52.4	3.0	114	4	US-09-436-068A-12	Sequence 11, Appl
	13	37.2	2.2	891	1	US-07-783-705A-11	Sequence 11, Appl
	14	37.2	2.2	1232	1	US-08-908-758-1	Sequence 1, Appl
	15	37.2	2.2	6918	1	US-07-783-705A-13	Sequence 13, Appl
	16	36	2.1	1959	3	US-09-166-460-1	Sequence 1, Appl
	17	36	2.1	1959	4	US-09-361-718-1	Sequence 1, Appl
	18	36	2.1	1959	4	US-09-398-395A-27	Sequence 27, Appl
c	19	35.4	2.0	1959	1	US-08-468-036-19	Sequence 19, Appl
c	20	35.4	2.0	2468	1	US-08-376-843-19	Sequence 19, Appl
c	21	35.4	2.0	2468	2	US-08-447-500-3	Sequence 3, Appl
c	22	35.4	2.0	2469	1	US-08-454-097-3	Sequence 3, Appl
c	23	35.4	2.0	2469	1	US-08-453-866-3	Sequence 3, Appl
c	24	35.4	2.0	2469	3	US-08-185-359-3	Sequence 3, Appl
c	25	34.8	2.0	654	4	US-09-288-143-37	Sequence 37, Appl
c	26	34	2.0	1056	4	US-09-134-001C-2655	Sequence 2655, Ap
c	27	33.4	1.9	25002	4	US-08-961-527-48	Sequence 48, Appl
	28	33.2	1.9	18475	4	US-08-961-527-38	Sequence 38, Appl
	29	33	1.9	6265	4	US-09-129-112-3	Sequence 3, Appl
c	30	33	1.9	98844	4	US-09-791-211-10	Sequence 10, Appl
	31	32.8	1.9	1923	4	US-09-149-476-192	Sequence 192, App
	32	32.8	1.9	1988	4	US-09-643-597-173	Sequence 173, App
	33	32.8	1.9	12734	4	US-09-344-456-1	Sequence 1, Appl
	34	32.8	1.9	14078	4	US-09-433-262-1	Sequence 1, Appl
	35	32.8	1.9	14078	3	US-09-702-330-1	Sequence 1, Appl
	36	32.6	1.9	14578	3	US-08-859-694-1	Sequence 1, Appl
	37	32.6	1.9	363	2	US-08-967-101-30	Sequence 30, Appl
	38	32.6	1.9	363	3	US-08-592-541-30	Sequence 30, Appl
	39	32.6	1.9	363	3	US-09-124-698-30	Sequence 30, Appl
	40	32.6	1.9	363	4	US-09-127-480-30	Sequence 30, Appl
	41	32.6	1.9	363	4	US-08-496-841C-30	Sequence 30, Appl
	42	32.6	1.9	363	4	US-09-124-523-30	Sequence 30, Appl
c	43	32.6	1.9	1449	4	US-08-858-207A-54	Sequence 54, Appl
c	44	32.6	1.9	5910	4	US-08-961-527-165	Sequence 165, App
	45	32.6	1.9	28882	4	US-08-961-527-140	Sequence 140, App

ALIGNMENTS

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RESULT 1
US-08-579-667-5
; Sequence 5, Application US/08579667
; Patent No. 5705624
; GENERAL INFORMATION:
;   APPLICANT:  Fitzmaurice, Wayne P.
;   APPLICANT:  Hellmann, Gary M.
;   APPLICANT:  Grill, Laurence K.
;   APPLICANT:  Kumagai, Monto H.
;   APPLICANT:  Della-Cioppa, Guy R.
;   TITLE OF INVENTION:  DNA SEQUENCES ENCODING ENZYMES USEFUL IN
;   TITLE OF INVENTION:  PHYTOENE BIOSYNTHESIS
;   NUMBER OF SEQUENCES:  19
;   CORRESPONDENCE ADDRESS:
;     ADDRESSEE:  Virginia C. Bennett
;     STREET:  1211 East Morehead Street, PO Drawer 34009
;     CITY:  Charlotte
;     STATE:  No. 5705624th Carolina
;     COUNTRY:  USA
;     ZIP:  28234
;   COMPUTER READABLE FORM:
;     MEDIUM TYPE:  Floppy disk
;     COMPUTER:  IBM PC compatible
;     OPERATING SYSTEM:  PC-DOS/MS-DOS
;     SOFTWARE:  PatentIn Release #1.0, Version #1.30
;   CURRENT APPLICATION DATA:
;     APPLICATION NUMBER:  US/08/579,667
;     FILING DATE:
;     CLASSIFICATION:  435
;   ATTORNEY/AGENT INFORMATION:
;     NAME:  Bennett, Virginia C.
;     REGISTRATION NUMBER:  37,092
;     REFERENCE/DOCKET NUMBER:  627-196
;   TELECOMMUNICATION INFORMATION:
;     TELEPHONE:  919-420-2200
;     TELEFAX:  919-881-3175
;   INFORMATION FOR SEQ ID NO:  5:
;     SEQUENCE CHARACTERISTICS:
;       LENGTH:  1826 base pairs
;       TYPE:  nucleic acid
;       STRANDEDNESS:  single
;       TOPOLOGY:  linear
;     MOLECULE TYPE:  cDNA
;     FEATURE:
;       NAME/KEY:  CDS
;       LOCATION:  367..1596
US-08-579-667-5

Query Match           50.2%;  Score 868;  DB 1;  Length 1826;
Best Local Similarity 77.2%;  Pred. No. 3.8e-239;
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Matches 1187; Conservative 0; Mismatches 255; Indels 96; Gaps 7;

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Qy  109  TTGAAATTAGTGGATAGACTCAGTCGATATCTACAAGTATTGGTTTTTGATAAAATAG  168
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Db  221  TAGACTCTAGTGGATCTACTAGGAGTATTTTTTATTTTTTTATTTTTTATAAATTAA  280

Qy  169  GCTGAGGTGAGAAGGTAACATAA------GGAAAGACAAAAACTTGGGAATTGTTT  220
         ||  ||  |   |||| ||| ||        |  |  ||||| ||||||||||||||
Db  281  GCAGAGGAGGGGAAGGAAGAAGCAGAAAACAGAAGAAAGTAAGACAAAAAACCTTGGAATTGTTT  340

Qy  221  AGACCACCGAGGTTTCTTGTTTCATGAGCATGTCTGTTGTTTGTTGGGTTGTTTCTC  280
         ||| |  ||||||||  ||  |       |||||||||||||||||||||||||
Db  341  AGACAACCAAGGTTTGTTGTTC---AGAATGTCTGTGCCTGTTATGGGTGTTTCAC  397

Qy  281  CCACTTCCGAGGTCTCGAATGGGACAGGATTGTTCAGTCCGAGGAAGGAAACCGCG  340
             ||||||| |  |||||| ||||||||||||||||||||||||| | |||| ||
Db  398  ---CTTGTGAGGTCTCAAATGGGACAGGATTCTTGGATTCAGTCAGTAAGGGAGGAAACCGGG  454

Qy  341  TCTTTGTATCATCCAGGTTCCTAGCTCGAGATAGGAATTTGATGTGAATGGGAGAATCA  400
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Db  455  TTTTTGACTCGTCGAGG--------CATAGGAATTTAGTGTGCAATGCAATGAGAGAATCA  502

Qy  401  AGAAAGGTGGGAGACAAAGGTGGAATTTGGCCTCTTTAATTGCTGATCCAAGATATTCAT  460
          || ||||| ||||||  |||||||||  |  |     |||  ||   ||| |||
Db  503  TTTTGACTGCTGGAGG------------AAAGAGGGTGAAACAAAGGTGGAATTTTGG  533

Qy  461  AGAAAGGGGATCAAGAACTGAAAAGGGAACCACTTTCCTCGTACAGTCCAGTTTGGTGG  520
         |||  ||| || | |   |||    ||  |||||||| |||||||||||||||||
Db  534  --------------------------TTCTGTACGGTCTGCGATGGTGG  556

Qy  521  CTAGCCCAGCTTGAGAAAT---GACTGTGTCATCAGAGAAAAAGGTGTATGATGTGTAT  577
             |||||||| | | |||||      ||||| || |  ||||| ||||| ||||||||||
Db  557  CTACACCAACGGGAGAAATGGCGACAATGACATCAGAACACAGAAGGTTTATGATGTGTAT  616

Qy  578  TAAAGCAGGCAGCTTAGTGAGAGAGCAGCTGAGATCTACCGATGATTAGAAGTGAAGC  637
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Db  617  TGAAACAGCAGCTTTAGTGAAAAGGCAGCTGAGATCTACTGATGATTAGAAGTGAAGC  676

Qy  638  CGGATATTGTTGTTCCAGGGAATTTGGGCTTCGTGAGTGAAGCATATGATCGTTGTGGCG  697
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Db  677  CGGAGATCCCTCTCCCGGGAATTTGAGCTTGTTAAGTGAAGCATATGATGTGTGGCG  736

Qy  698  AAGTATGTGCAGAGTATGCAAAGACATTTACTTAGGAAGACAAGCTAATGACCCCAGAA  757
         |||||||||||| ||||||||||||||||||| ||||| ||||| ||||||  | ||||||
Db  737  AAGTATGCCAGAGTATGCAAAGACATTTACTTAGGAACTATGCTAATGACTCCAGAGA  796

Qy  758  GAAGAAGCTATCTGGGCAATATATGTGTGGTGCGACGAAACGGATGAGCTTGTTGATG  817
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Db  797  GAAGAGGGCTATTGGGCAATATGTGTGGTGCAGGAGAACAGATGAACTTGTTGATG  856

Qy  818  GCCCTAATGCACTCCCACATAACTCCGCAAGCTTTAGATAGTGGGAGGACCAGGCTGGAAG  877
         |||| ||||||| | |  ||||||| ||||||||| |||||||||||||||| |||||||
Db  857  GCCCGAATGCATCACATATTACTCCCACAAGCCTTAGATAGTGGGAGGACCGGCTGGAAG  916

Qy  878  ATATTTCAGTGGCGGCCATTGATATGCTTGATATGCTGCTTTATCCGATACTGTCTCCA  937
          |  | |||||||||||||| || ||| |||| ||||| |||| || |||||||| |
Db  917  ATGTTTCAGTGGCGGCCATTGATATGCTCGATGCTCGATACTGTTTCCC  976

Qy  938  GATTTCCTGTTGATATTCAGCCATTCAGAGATATGATTGAAGGAATGCGTATGGACTTGT  997
         ||||| ||| ||||||||||||||||||| ||||| ||||| |  |||||||||||||
Db  977  AGTTTCCAGTTGATATTCAGCCATTCAGAGATATGAGATATGGGATTGAAGGCAACAACTGA  1036

Qy  998  GGAAATCCAGATACAAAATTCGATGAGCCGTATATCTCTATTGTTACTATGTTGCTGGTA  1057
         || | | | ||| || |||||| | ||  |||  | | | |||  ||| ||||| ||||
Db  1037 GGAAGTCAAGATACAGAAACTTTGATGAGCTATACCTATATTGTTATTACGTTGCTGGTA  1096

Qy  1058 CTGTAGGATTGATGAGTGTTCCAGTTGTTATGGGTATTGCACCTGAATCAAAGGCAACAACAG  1117
          || | |||| ||| || | |  |||||| |||| | | |||| |||||||| |||||||||
Db  1097 CGGTTGGTTGATGAGTGTTCCAATTATGGGTATTGCACCTGATTCAAAGGCAACAACAG  1156

Qy  1118 AGAGTGTATAATAATGCTGCTTGGCTTGGCTTAGGGCTTGCAAATCAACTAACCAATATACTCA  1177
         |||||||||| || ||||||||||||  |||| |||||||||||||||||| ||||||||
Db  1157 AGAGTGTATATAATGCTGCTTGGGATCGCAAATCAACTAACCAACCAACTACTCA  1216
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Qy  1178 GAGATGTAGGAGAAGATGCCAGAGAGAGGAAGAAGATATACTTGCCTCAAGATGAATTAGCAC  1237
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Db  1217 GAGATGTCGGAGAAGATGCCAGAGAGAGGAAGAAGAGTCTACCTCAAGATGAGTTAGCAC  1276

Qy  1238 AGGCAGGGCTCCGACGAAGACATATTGCTGGAAGAGTGACTGATAAGTGGAGGAACT  1297
         ||||| ||||||||||| |||| |||||||||||||| |||||||| ||||||||||
Db  1277 AGGCAGGTCTCCGACAATGACATTTTGCTGGAAAAGTGACTGATAAATGGGAAGAGCT  1336

Qy  1298 TTATGAAGAACAAATTCAGAGGGCGAGGAAATTCTTTGATGAGTCAGAGAAAGGTGTCA  1357
         ||||||||| |||||||||||| || ||||||||||  ||||||| |  |
Db  1337 TTATGAAGAAGCAAATCCAGAGGGCCAAGAAAATTCTTCCGACGAAGAAAATCTTGTCACA  1396

Qy  1358 CAGAACTGGACTCTGCTAGTGAGTGGCCTGTTGTTAACAGCGCTGCTGTTGTATCGCAAGA  1417
         |  |||| |  || ||  || || ||| | ||| ||  | ||||| || |  |  | ||
Db  1397 CACAACTGAGCTCAGCTAGTGATGGGCCATCTTTGCTTGCTGTTGTGTTACCGGCCAGA  1456

Qy  1418 TATTGGACGAGATTGAAGCCAACGACTACAACACTTCACAAGGAGGGCTTATGTTAGCA  1477
         |||  ||||||  |||||||||||| |||| |||||||||||||||| |||| || |||
Db  1457 TACTCGACGAGATTGAAGCCAATGACTACAACACTTCACAAGGAGAGCTTATGTGAGCA  1516

Qy  1478 AGCCAAAGAGCTTCTCACCTTGCCCATTGCTTCTTATGCAAAATCTCTTGTGCCCCCTAATA  1537
          | ||||||||| |||  | |  | |   |||||| |||||||| |||||||||||||
Db  1517 AACCAAAGAAGCTAATTCCTTACCTATTGCTTCTTATGCAAAATCTCTTGTGCCCCCTACAA  1576

Qy  1538 GAACT-TCCTCTCCACTAGCAAAGACATGAATGAAGTAGTGCAATGAGTCAATGAGTATTATAC  1596
         |||||  |  | | |||||||| |||| | |||||||| || |||| |  |||||||| |
Db  1577 GAACTCTTGTCACCTCAGCTAGCTAAGGCATAGACAAATCTTTGTGCCCCTACAA  1636

Qy  1597 ACTAAAGAAACTCAGGTACTTGTAAATGAGATATCTTT  1634
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Db  1637 TATATTATTATTATTACTGTTAAAAGGAAAGAATTT  1674
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RESULT 2
US-08-579-667-1
; Sequence 1, Application US/08579667
; Patent No. 5705624
; GENERAL INFORMATION:
;   APPLICANT: Fitzmaurice, Wayne P.
;   APPLICANT: Hellmann, Gary M.
;   APPLICANT: Grill, Laurence K.
;   APPLICANT: Kumagai, Monto H.
;   APPLICANT: Della-Cioppa, Guy R.
;   TITLE OF INVENTION: DNA SEQUENCES ENCODING ENZYMES USEFUL IN
;   TITLE OF INVENTION: PHYTOENE BIOSYNTHESIS
;   NUMBER OF SEQUENCES: 19
;   CORRESPONDENCE ADDRESS:
;   ADDRESSEE: Virginia C. Bennett
;   STREET: 1211 East Morehead Street, PO Drawer 34009
;   CITY: Charlotte
;   STATE: No. 5705624th Carolina
;   COUNTRY: USA
;   ZIP: 28234
;   COMPUTER READABLE FORM:
;   MEDIUM TYPE: Floppy disk
;   COMPUTER: IBM PC compatible
;   OPERATING SYSTEM: PC-DOS/MS-DOS
;   SOFTWARE: PatentIn Release #1.0, Version #1.30
;   CURRENT APPLICATION DATA:
;   APPLICATION NUMBER: US/08/579,667
;   FILING DATE:
;   CLASSIFICATION: 435
;   ATTORNEY/AGENT INFORMATION:
;   NAME: Bennett, Virginia C.
;   REGISTRATION NUMBER: 37,092
;   REFERENCE/DOCKET NUMBER: 627-196
;   TELECOMMUNICATION INFORMATION:
;   TELEPHONE: 919-420-2200
;   TELEFAX: 919-881-3175
; INFORMATION FOR SEQ ID NO: 1:
;   SEQUENCE CHARACTERISTICS:
;   LENGTH: 1795 base pairs

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;   TYPE:  nucleic acid
;   STRANDEDNESS:  single
;   TOPOLOGY:  linear
;   MOLECULE TYPE:  cDNA
;   FEATURE:
;     NAME/KEY:  CDS
;     LOCATION:  362..1591
US-08-579-667-1

Query Match             49.7%;  Score 858.6;  DB 1;  Length 1795;
Best Local Similarity   76.4%;  Pred. No. 1.9e-236;
Matches 1230;  Conservative  0;  Mismatches  274;  Indels  107;  Gaps  10;

Qy    141  TACAAGTATTGGTTTTTGTAAAATAGGCTGAGTGAGAAGGTAACA------TAAAG  193
                II IIIIII IIIIII II I IIIII I IIIII IIII          IIII
Db    248  TAAATTTATTTATTTTTTTATAAATTAAGGAGGAGGAAGAAAAAACTGAAAG  307

Qy    194  GAAAGACAAAAACTTGGGAATTGTTTTAGACCACCGAGGTTCTTGTTTCATGAGCATGT  253
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Db    308  TAAGACAAAAAAACCTGGAATTGTTTTAGACAACCAAGGTTTTC--TTGCTCAGAATGT  365

Qy    254  CTGTTGCTTGTTGTGTGGGTGTGTTCTCCCACTTCGAGGTCTCGAGTGGGACAGGATTGT  313
                IIIIIIIIIIIII       III IIIIIII IIIIIIIIIIIIIIIII I
Db    366  CTGTTGCCTGTTGTTATGGGTGTTGTTCAC---CTTGTGAGGTCTCAAATGGGACAGGATTCT  422

Qy    314  TGGATTCAGTCGCGAGAAGGAAACCCGTCTTTGTATCATCCAGGTTCCTAGCTCGAGATA  373
                IIIIII  II I IIIIIIII II I IIIII I  II I IIIII III
Db    423  TGGATTCAATTCGGGGAGGAGGAAACCGGTTTTTGATTTGTCGAGGT------ATA  470

Qy    374  GGAATTGATGTGATGGGAGAATCAAGAAAGGTGGGAGACAAAGGTGGAATTTTGGCT  433
                IIIIIIIIII IIIIII IIIIIIII II IIIIII III IIIIIIII
Db    471  GAAATTTAGTGTGCAATGAGAGAACAAGAGAGGTGGGAAACAAAGGTGAATTTGG--  528

Qy    434  CTTTAATTGCTGATCCAAGATATTCATGCTTGGGTGGGTGGGATCAAGAACTGAAAAAGGGAAGCA  493
                                IIIIIIIIII II IIII   IIIII IIIIIII IIIIIIIIII
Db    529  --------------------------------------------------------  528

Qy    494  CTTTCTCTGTACAGTTGGTGGCTAGCCCAGCTGGAGAAAT---GACTGTGTCAT  550
                IIIIII  III IIIIIII II III     III I  III   III III III
Db    529  ---TTCTGTAAGGTCTGCTATGGTGGCTACACCGGCGGGAGAAATGGCCGACGATGACAT  584

Qy    551  CAGGAGAACGGATGAGCTTGTTGATGATGGTATTAAAGCACAGGCAGCTTTAGTGAAGAGGCAGCTGA  610
                III IIIIIIIIIIIII     IIIIIIIII IIIIIII I III IIIIIIIIIIIIIII
Db    585  CAGGAGAACAGATGGTTTATGATGTGGTTTAAAACAACAGCAGCTTTAGTGAAGAGGCAGTTGA  644

Qy    611  GATCTCACCGATGATTAGAAGTGAAGCCGGATATTGTTGTTCCAGGGAATTTGGGCTTGT  670
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Db    645  GATCTACTGATGATTAGAAGTGAAGCCCGGAGATCCCCTCTCCAGCGAAATTTGAGCTTGT  704

Qy    671  TGAGTGAAGCAGCATAAGATCGTTGTGCGGCGAAGTATCGTCAGAGTATGCAAAGACAATTTTACT  730
                IIIIIIIIIIIIIII  II I IIIIIIII IIIIIIIIIIIIIIIIIIII IIIIIIIIIIIII
Db    705  TGAGTGAAGCAGCATATGATGATAGGTGTAGTGTAGTGAAGTATGCAGAGTATGCAAAGACAATTTTACT  764

Qy    731  TAGGAACCAAGCTAATGACCCCAGAAGAGAAGAAGAAGAGCTATCTGGGCCAATATATGTGTGGT  790
                IIIIIIIIIIIIII IIIIIIIIIIIIIIIIIIIIIIIII  IIIII III III III III
Db    765  TAGGAACCATGCTAATGACCCCAGAAGAGAGAAGAGAGGGCTATTTGGGCAATATATGTATGGT  824

Qy    791  GCAGGAGAACGGATGAGCTTGTTGATGGCCTAATGCATCCCACATAACTCCGCAAGCTT  850
                IIIIIIIIIII IIIII IIIIIIIIIIIIIIII II II I IIIIIIIIIIIIIIII
Db    825  GCAGGAGAACAGATGAACTTGTTGATGGCCCGGAATGCATCCCATATTACCCCACCAAGGCT  884

Qy    851  TAGATAGGTGGGGACCAGGCCTGGAAGATATTTTCAGTGGGCGGCCATTGATATGCTTG  910
                IIIIIIIIIIIIIII        IIIIIIIIIIII IIIIIIIIIIIIIIIIIIIIII
Db    885  TAGATAGGTGGGGAAGACCTGCTGAAGATGTTTTTCAGTGGGCGGCCATTGATATGCTCG  944

Qy    911  ATGTGCTTTATCCGATACTGTCTCCAGATTCCTGTTGATATTCAGCCATTCAGAGAGATA  970
                IIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII
Db    945  ATGTCGCTTTGTCCGATACTGTTTCCAAGTTTCCAGTTGATATTCAGCCATTCAGAGATA  1004

Qy    971  TGATTGAAGGAATGCGTATGGACTTGTGAAATCCAGATACAAAAACTTGCGATGAGCTAT  1030
                IIIIIIIIIIIIIIIIIII IIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII
Db   1005  TGATTGAAGGAATGCGTATGGACTTGAGGAAGTCAAGATACAGAAACTTTGATGAGCTAT  1064

Qy   1031  ATCTCTATTGTTACTATGTTGCTGGTACTGCTGGTCTGCTAGGATTGATGAGTGTTCCAGTTATGGGTA  1090
                I II IIIIIII  II  IIIIIII IIIIII II IIIIIIIIIIIIIIIIIIIIIIIIIIIII
Db   1065  ACCTATATTGTTATTACGTTGCTGGTACGGTTGGTTGGTGTTCCAATTATGGGTA  1124

Qy   1091  TTGCACCTGAATCAAAGGCAACAACAGAGAGTGTATATAATGCTGCTTGGCTTAGGGC  1150
                IIIIIIIIIIIIIIIIIIIIIIIIIIIIII  IIIIIII IIIIIIIII II IIIII
Db   1125  TTGCACCTGATTCAAAGGCAACAACAGAGAATGTATATAATGCTTGGCTTTGGGTA  1184

Qy   1151  TTGCAAATCAACTAACCAATATACTCAGAGATGTAGGAGAGATGCCAGAAGAGGAAGAG  1210
                IIIIIIIIIIIIIIIIII IIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII
Db   1185  TAGCAAATCAACTAACAACATACTCAGAGATGTCGGAGAAGATGCCAGAAGAGGAAGAG  1244

Qy   1211  TATACTTGCCTCAGATGAATTAGCACCAGGCAGGGCTCTCCGACGAAGACATATTCGCTG  1270
                I IIIII  IIIIIIIIII IIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII IIIII
Db   1245  TCTACTTACCTCAGATGAATTAGCACATGCAGGGCTCTCCGACGATGACATATTCGCTG  1304

Qy   1271  GAAGAGTGACTGATAAGTGAGGAACTTTATGAAGAACAAATTCAGAGGGCCAGGAAAT  1330
                III IIIIIII IIIIIIIIIIIII  III II IIIIIIIIIIIIIIIIIIIIIIII
Db   1305  GAAAAGTGACGGATAAATGGAAGAAGCTTTATGAAGAAGCAATCCAGAGGGCAAGAAAGT  1364

Qy   1331  TCTTTGATGAGTCAGAGAAAGTGTCACAGAAACTGGACTCTGCTGGTAGTAGATGGCCTGTGT  1390
                IIIIIIIIIIIII IIIII IIIIIIIIIIII IIIIIIIIII IIIIIIIIIIIIIIIII
Db   1365  TCTTTGATGAGGCAGAGGAGGAGTGACACAACTGAGCTTCAGTCAGTAGTAGATGGCCTGTAT  1424

Qy   1391  TAACAGCGCGTCGTGTTGTATCGCAAGATATTGGACGAGATATTGGACGAACGACTACAACA  1450
                 IIIIIIII IIIIIIIIIIIIIIIIIIIIIIII IIIIIIIIIII IIIIIIIIIIIIIIII
Db   1425  GGGCTTCTTTGCTGTTGTTGTACCGCCAGATACTCCGACGATGACATGAAGCCAATGACTACAACA  1484

Qy   1451  ACTTCACAAGGAGGGCTTATGTTGCAAGCCAAGAAGAGCTTCTCACCTTGCCCATTGCTT  1510
                IIIIIIIIIIIIIIIIIIII IIIIIIIIIIIIIIIIIIIIIIII II IIIIIIIIII
Db   1485  ACTTCACAAAGAGAGCTTATGTGAGCAAATCAAAGAAGCTAATTTCCTTACCTATTGCTA  1544

Qy   1511  ATGCAAAATCCTTGTGCCCCCTAATAGAACT-TCCTCTCCACTAGACAAAGACATGAATG  1569
                IIIIIIIIIIIIIIIIIIIIIIIII  IIIIII   III IIIIIIIIIIIIIIIIIIIIII
Db   1545  ATGCAAAATCTCTTGTGTCCCCCCAACAAGAACTCTTGTCTCCTCTAGCTAAGGCATAGACA  1604

Qy   1570  AAGTAGTTGAGTCAATG------------AGTATTATACACTAAGAAAACTCAGGTACTTG  1618
                II IIII                       I I  III I IIIIIIIIIIIIIIIIIIIII
Db   1605  TCAGATTTAAATTAAGAGCAAGAAAGCATATCCTGTTAAAAAGAAAGAATTATAAAGTA  1664

Qy   1619  TAAATGAGATATCTTTTGCTAAAATGTGTCATCATCAAAAGTAGATTGT-AAATTCAATATG  1677
                I   II I IIIIIIIIIIIIIIIII I III IIIIIIIIIIIIIII   IIIIIIIIIIIII
Db   1665  GATATTGGTGATTGGTATTGGATGTCACTTGATATCATCAAAAGTAGTAGTAAAATTCAATATA  1724

Qy   1678  ACAATCTCTTGTGTAGAATAT-TTTCTCCACACTCATCAAACCCTCAAGTGA  1727
                IIIIIIIIIIIIII  IIIIII   II IIIIIII   II IIIIIII
Db   1725  ACAATCTTTAGTGTTGTTGTATGTCATTTAACAATCTTAAACCCTTCGAGGGA  1775

RESULT 3
US-08-579-667-7
; Sequence 7, Application US/08579667
; Patent No. 5705624
; GENERAL INFORMATION:
;   APPLICANT:  Fitzmaurice, Wayne P.
;   APPLICANT:  Hellmann, Gary M.
;   APPLICANT:  Grill, Laurence K.
;   APPLICANT:  Kumagai, Monto H.
;   APPLICANT:  Della-Cioppa, Guy R.
;   TITLE OF INVENTION:  DNA SEQUENCES ENCODING ENZYMES USEFUL IN
;   TITLE OF INVENTION:  PHYTOENE BIOSYNTHESIS
;   NUMBER OF SEQUENCES:  19
;   CORRESPONDENCE ADDRESS:
;     ADDRESSEE:  Virginia C. Bennett
;     STREET:  1211 East Morehead Street, PO Drawer 34009
;     CITY:  Charlotte
;     STATE:  No. 5705624th Carolina
;     COUNTRY:  USA
;     ZIP:  28234
; COMPUTER READABLE FORM:
;     MEDIUM TYPE:  Floppy disk
;     COMPUTER:  IBM PC compatible
;     OPERATING SYSTEM:  PC-DOS/MS-DOS
```

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; SOFTWARE: PatentIn Release #1.0, Version #1.30
; CURRENT APPLICATION DATA:
;   APPLICATION NUMBER: US/08/579,667
;   FILING DATE:
;   CLASSIFICATION: 435
; ATTORNEY/AGENT INFORMATION:
;   NAME: Bennett, Virginia C.
;   REGISTRATION NUMBER: 37,092
;   REFERENCE/DOCKET NUMBER: 627-196
; TELECOMMUNICATION INFORMATION:
;   TELEPHONE: 919-420-2200
;   TELEFAX: 919-881-3175
; INFORMATION FOR SEQ ID NO: 7:
;   SEQUENCE CHARACTERISTICS:
;     LENGTH: 1814 base pairs
;     TYPE: nucleic acid
;     STRANDEDNESS: single
;     TOPOLOGY: linear
;   MOLECULE TYPE: cDNA
;   FEATURE:
;     NAME/KEY: CDS
;     LOCATION: 363..1592
; US-08-579-667-7

Query Match          49.4%;   Score 853.4;  DB 1;   Length 1814;
Best Local Similarity 76.5%;   Pred. No. 5.9e-235;
Matches 1223;  Conservative 0;  Mismatches 266;  Indels 110;  Gaps 10;

Qy   141 TACAAGTATTGGTTTTTGATAAATAGGCTGAGGTGAGAAGG------TAACATAAAG 193
         |||| |||| ||||||| ||||| ||| | | |||| |||||     |||| ||||
Db   250 TAAATTATTAATTTTTTTATAAATTAAGCAGAGGAAGGAAACAGAAAACAGAAAG 309

Qy   194 GAAAGACAAAAACTTGGAATTGTTTAGACCACCAGGTTCTTGTTTCATGAGCATGT 253
         || |||||||| ||||||||||||||||    || ||| ||  ||| ||||| |||
Db   310 TAAGACAAAAACCTTGGAATTGTTTAGAAAACCAAGTTTTTCCTGTTCAAA---ATGT 366

Qy   254 CTGTTGCTTGTTGTGGGTTGTTCTCCCACTTCCGAGCTCTCGAATGGGACAGGATTGT 313
         |||||||  |||| ||||||||||   ||| ||| ||||| |||||||||||||||| |
Db   367 CTGTTGCCTTGTTATGGGTTGTTCAC---CTGTGAAGTCTCAAATGGGACAGGATTCT 423

Qy   314 TGGATTCAGTCGCCAGAAGGAGAAACCGCGTCTTTGTATCATCCAGGTTCCTAGCTCGAGATA 373
         |||||||||||||  | |||||||||||| || |||| |||| |||||||||| |||||||||
Db   424 TGGATTCAGTCGCCGGGAGGAGAAACCGGGTTTTTGATTCGTCGAGG--------CATA 471

Qy   374 GGAATTGATGTGGAATGGGAGAATCAAGAAGGTGGAGACAAAGGGTTGGAATTTTGGCT 433
         |||||| |||||||| || |||| ||||| || ||| | ||||| ||||||||| |||
Db   472 GGAATTTAGTGTGCAATGAGAGAAACAAGAGGAGGTGTGAAACAAAGGTGGAATTTGG-- 529

Qy   434 CTTTAATTGCTGATCCAAGATATTCATGCTTGGGTGGATCAAGAACTGAAAAGGGAAGCA 493
Db   530 -------------------------------------------------------------- 529

Qy   494 CTTTCTCTGTACAGTCCCAGTTTGGTGGCTAGCCCAGCTGGAGAAAT--GACTGTGTCAT 550
         ||  |||||||    ||  ||||||||||| ||   ||| |||||||  | |||||| |||
Db   530 ----TTCTGTAAGGDCTGCTGCTATGGTGGCTCACACCGGCGGAGAAATGGCGACGATGACAT 585

Qy   551 CAGAGAAAAAGGTGTATGATGTGGTTTATGATGTGGTTTAAAAGCAGCAGCTTTAGTGATGCTGA 610
         |||| | | ||||| ||||||||||| |||||||||||||||||||||||||| ||||| | ||
Db   586 CAGAACAGATGGTTTATGATGTGGTTTATGATGTGGTTTAAAAGCAGCAGCTTTAGTGAAGGCAGTTGA 645

Qy   611 GATCTACCGATGATTAGAAGTGAAGCCGGATATTGTTGTTCCAGGGAATTGGCCTTGT 670
         |||||  |||||||||||||||||||||| |||| | |||||||||||||||||||||
Db   646 GATCTGCTGATGATTAGAAGTGAAGCCGGAGATTGGCCTTGT 705

Qy   671 TGAGTGAAGCCATATGATCGTTGTGCGGAAGTCGTTGGCGAAGTATGTGCGAAGTATGCAGAAGACATTTTACT 730
         |||||||||||| |||||||||||||||||||||||| | | |||||||||||  ||| ||||||||||| |||
Db   706 TGAGTGAAGCCATATGATCGTTGTGCGGAAGTCGTTGTAGTGAGGTATGTGCGAAGTATGCAAAAGACATTTTACT 765

Qy   731 TAGGAACCAAGCTAATGACCCCAGAGAGAGAGAGCTATCTGGCAATATGTGTGGT 790
         |||||||| | |||||||| | |||||||| |||| ||| |||||||| |||||||
Db   766 TAGGAACACGGCTAATGACTCACGAGAAGAAGAAGGGCTATTGGGCAATATAIGTGTGGT 825

Qy   791 GCAGGAGAACGGATGAGCTTGTTGATGGCCCCTAATGCATCATCCCACATAACTCCGGCAAGCTT 850
         |||||||||| ||||| |||||||||||||| |  || | |||||||||||| |||| ||||| |
Db   826 GCAGGAGAACAGATGAACTTGTTGATGGCCCATCAACGGTACACCCAAGCCT 885

Qy   851 TAGATAGGTGGGAGACGCCAGGCTGGAAGATATTTCAGTGGCGGCCATTGTGATATGCTTG 910
         |||||||||||||||||  ||||| ||||||| |||||| ||||||| | ||||||||| |
Db   886 TAGATAGGTGGGAGACGACCGGCTTGAAGATGTTTCAGCGGCGGCCACCATTGTGATATGCTCG 945

Qy   911 ATGCTGCTTATCCGATACTGTCTCCGAGATTCCTGTGATATTCAGCCATTCAGCGATA 970
         ||||||||| |||||||||||   | |||||||| |||||||||||| ||||| ||||
Db   946 ATGCTGCTTGTCCGATACTGTTCCAAGCTTCCAGTTGATATTCAGCCGTTCAGAGATA 1005

Qy   971 TGATTGAAGGAATGCGTATGGACTTGTGAAATCCAGATACAAAACTTTCGATGAGCTAT 1030
         ||||||||||||||||||||||||||   | ||||||| | |||||| |||||||| |
Db  1006 TGATTGAAGGAATGCGTATGGACTTGAGGAGTCAAGATATAGAAACTTGATGAGCTTT 1065

Qy  1031 ATCTCTATTGTTACTATGTGCTGTGTGACTGTAGGATTGAGTGGTGTTCCAGTTATGGGTA 1090
         | ||||||||||| ||  | ||||| ||  | |||||||||||||||||||| ||||||||
Db  1066 ACCTCTATTGTTATTACGTTGCTGTCGTGGTTGGGTTGATGAGTGTTCCAATTATGGGTA 1125

Qy  1091 TTGCACCTGAATCAAAGGCAACAACAGAGACGTGTATATAATGCTGCTTTGGCTTTAGGGC 1150
         ||||||||||  ||||||||||||||||||| | ||||||||| |||||||||||||||
Db  1126 TTGCACCTGATTCAAAGGCAACAACAGAGACGTATATAATGCAGCTTTGGCTTTAGGAA 1185

Qy  1151 TTGCAAATCAACTAACCAATATACTTCAGAGATGTAGGAGAGATGCCAGAAGAGGAAGAG 1210
         | || ||||||||||| || |||||| |||||||| |||||||||||||||||||||||
Db  1186 TCGCGAATCAACTAACGAACATACTCAGGGATGTTGGAGAAGATGCCAGAAGAGGAAGAG 1245

Qy  1211 TATACTTGCCTCAAGATGAATGAATTAGCACAGCAGGGCTCTCCGACGAAGACATATTTGCTG 1270
         | ||||| ||||||||||||| | ||||||||||| |||||| || || |||||||||||||
Db  1246 TCTACTTACCTCAAGATGAATTAGCACAGCAGGCTCTTCGCGATGACATATTTGCTG 1305

Qy  1271 GAAGAGTGACTGATAAGTGGAGAACTTTATGAAGAACAAATTCAGAGGGCGGAGAAAT 1330
         || |||||||||||||||||||||  |||||||||| |||| |||||||| ||||| |
Db  1306 GAAAAGTGACTGATAAGTGGAGAAGCTTTATGAAGAAGCAAATCCAGAGGGCCAAGAAAGT 1365

Qy  1331 TCTTTGATGAGTCAGAGAAAGGTGTCACAGAACTGACTCTGTCCTAGTAGATGGCCTGTGT 1390
         |||| |||||| ||| | | || || |||| |||||||| ||| | ||| ||| |||| |
Db  1366 TCTTCCGATGAGCAGCAGGAGGGAGTTACACACTGACTCAGCTGGCCTGTAT 1425

Qy  1391 TAACAGCGCTGCTGTGTGTATCGCCAAGATATTGGACAGATTGGAAGCCAACGACTACAACA 1450
         ||| | || |||||| | ||| ||| ||| |||||||| ||||||||||  || ||||||||
Db  1426 GGGCATCTTTGCTGTGTACCGCCCAAATACTGGACGAGATTGAAGCCAATGACTACAACA 1485

Qy  1451 ACTTCACAAGGAGGGGCTTATGTTAGCAAGCCAAAGAGTCTCCACCTTGCCATTGCTT 1510
         |||||||| ||||  | |||||| ||||| ||||||||| |   | || ||||||||
Db  1486 ACTTCACAAAGAGAGCGTTATGTGAGCAAACCAAAGAGCTAATTTCCTTACCTATTGCTT 1545

Qy  1511 ATGCAAAATCTCTTGTGCCCCCTAATAGAACT--TCCTCTCCACTAGCAAAAGACCATGAATG 1569
         ||||||||||||||||||||||||  ||||||  | | | || || |   ||||| ||| |
Db  1546 ATGCAAAATCTCTTGTGCCCCCTACAGAACTCTTGTCACCTCTAGCTAGCATAGACA 1605

Qy  1570 AAGTAGTTGAGTCAATG------AGTATTATACACTAAAGAAACTCAGGTACTTGTAAA 1622
         |||||| ||| ||| |       | ||| |   | ||| ||  | ||| | |  ||||
Db  1606 TCAGATTAAATTAAGCAAGAAACGCATATATTACTATTAAAAAGAGATTTCTAAA 1665

Qy  1623 TGAGATATCTTT-------TGCTAAAATGTGTATCATCAAAAGTAGATTGT-AAATTCAAT 1674
         |||||||| |||       |||| || |||||| ||||||||||||  |  |||| |||||
Db  1666 GTAGATATTGTTGTGTAATTGTGATGATGTGCCACTTGTATATCGTATATCAAAAGTAGTAGTAAAATCCAAT 1725

Qy  1675 ATGACAAATCTCTTGGTAGAATATTTTCTCCACACTCATC 1713
         || ||||||||||| | |||| |||||| || |||||||
Db  1726 ATAACAATCTCTAGTAGTTGTGTATGTTCACAATCTTAAGC 1764

RESULT 4
US-07-995-950-2
; Sequence 2, Application US/07995950
; Patent No. 5304478
; GENERAL INFORMATION:
;   APPLICANT: Bird, Colin R.
;   APPLICANT: Grierson, Donald
;   APPLICANT: Schuch, Wolfgang W.
;   TITLE OF INVENTION: DNA, CONSTRUCTS, CELLS AND PLANTS
```

TITLE OF INVENTION: DERIVED THEREFROM
NUMBER OF SEQUENCES: 6
CORRESPONDENCE ADDRESS:
  ADDRESSEE: Cushman, Darby & Cushman
  STREET: 1615 L Street, N.W.
  CITY: Washington
  STATE: D.C.
  COUNTRY: U.S.A.
  ZIP: 20036-5601
COMPUTER READABLE FORM:
  MEDIUM TYPE: Floppy disk
  COMPUTER: IBM PC compatible
  OPERATING SYSTEM: PC-DOS/MS-DOS
  SOFTWARE: PatentIn Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
  APPLICATION NUMBER: US/07/995,950
  FILING DATE:
  CLASSIFICATION: 800
PRIOR APPLICATION DATA:
  APPLICATION NUMBER: US/07/625,664
  FILING DATE:
ATTORNEY/AGENT INFORMATION:
  NAME: Kokulis, Paul N.
  REGISTRATION NUMBER: 16,773
  REFERENCE/DOCKET NUMBER: PNK/3893/82895/MJW
TELECOMMUNICATION INFORMATION:
  TELEPHONE: 202-861-3000
  TELEFAX: 202-822-0944
  TELEX: 248453 cush
INFORMATION FOR SEQ ID NO: 2:
SEQUENCE CHARACTERISTICS:
  LENGTH: 1646 base pairs
  TYPE: nucleic acid
  STRANDEDNESS: single
  TOPOLOGY: linear
  MOLECULE TYPE: cDNA
US-07-995-950-2

Query Match   48.78%;   Score 842; DB 1; Length 1646;
Best Local Similarity 74.3%; Pred. No: 1e-231;
Matches 1222;   Conservative 0; Mismatches 330; Indels 92; Gaps 9;

Qy   101 TATAATCGTTGAAATTAGTGGATAGACTCTAGTGGATATCTAC---AAGTATTGGTTTT 157
         || ||||| | | ||| ||||||||| |||||| ||||| |||||||
Db   53 TAATTTTTGTTTGAGAGTGGGAAATATTCTCTAGTGGAATCTACTAGGAGTAATTTATTTT 112

Qy   158 TGATAAAATAGGCTGAGGTGAGAAGGTAACATAAAGAAAGACAAAAACTTGGGAATTGT 217
         ||||| || | | |||||| ||| |||||||| |||| ||||||| |||||||
Db   113 CTATAAACTAAGTAAAGTTTGGAAGTGACA-AAAAGAAAGACAAAAAATCTTGGAATTGT 171

Qy   218 TTTAGACCACCGAGGTTTCTTGTTTCATGAGCATGTCTGTTGTTGTTGGTTGTTT 277
         ||||||| || |||| ||||||| | ||||| ||||||||| ||||||||||||||
Db   172 TTTAGACAACCAAGGT---TTTCTCTCAGAATGTCTGTTGCCTTGTTATGGGTTGTTT 228

Qy   278 CTCCCACTTCCGAGGTCTCGAATGGGACACGGATTGTTGGATTCAGTCAGTCGAGAAGAAACC 337
         ||| || ||||||||| |||||| | || |||| |||| ||||||| ||||||||||||
Db   229 CTC---CTTGTGACGTCTCAAATGGGACAAGTTCATGGAATCAGTCAGTCCGGGAGGGAAACC 285

Qy   338 GCGTCTTTGTATCATCCAGGTTCCTAGCTCGAGATAGGACATGTCTGTTGTGTGGATGGGAGAA 397
         | |||| ||||| |||||| |||||||||||| | ||| ||||| |||||||||
Db   286 GTTTTTTGATTCATCGAGG-------CATAGGAATTTGGTGTCCAATGAGAGA 333

Qy   398 TCAAGAAGGTGGGAGACAAAGGTGGAATTTTGGCTCTTTAATTGCTGATCCAAGATATT 457
         |||| ||| |||||||| || |||| || | || ||||| ||| |||| ||
Db   334 TCAATAGAGT----------------------------- 344

Qy   458 CATGCTTGGGTGGATCAAGAACTAAGAAAGGGAGCACTTTCTCTGTACAGTCCAGTTGG 517
         ||||| || ||| ||| | || |||| || ||||| ||| || |||||||||||
Db   345 ------GGTGGAAGCAAACTAATAATGGACGGAAATTTTCTGTACGGTCGTCTGCTATTT 396

Qy   518 TGGCTAGCCCAGCTGGAGAAATGACTGTGTCATCAGAGAAAAAAGGTGTATGATGGTGGTAT 577
         ||||| || ||||| ||||| ||| || | | ||| |||||| |||| |||||| |||
Db   397 TGGCTGCACTCGGAGAACGGAGGACGATGACATCCGGAACAGATGACTGCTTCTATGATGGTGTGT 456

──

Qy   578 TAAAGCAGGCAGCTTAGTGAGAGGCAGCTGAGATCTACCGATGATTTAGAAGTGAAGC 637
         | ||||||| || || ||| |||| |||||| ||||| | |||||||||||||
Db   457 TGAGGCAGGCAGCCTTGGTGAAGAGGCAACTGAGATCTACCAATGAGTTAGAAGTGAAGC 516

Qy   638 CGGATATTGTTGTTCCAGGGAATTGGGCTTGTGAGTGAAGCATATGATCGTGTGGGCG 697
         ||||| | | ||||||||||| ||||||||||||| |||||||||| |||||||||
Db   517 CGGATATACCTATTCCGGGGAATTGGGCTTGTGAGTGAAGCAATGATGAGGTGTGGTG 576

Qy   698 AAGTATGTGCAAGAGTATGCAAAGACATTTGGCTGTCAAGACCAAGCTAATGACCCAGAGA 757
         ||||||||||| |||||||||| ||| |||||| ||||| ||||||| || ||| ||
Db   577 AAGTATGTGCAGAGTATGCAAAGCGTTTAACTTAGGAACTCTAAGGAACTCCCGAGA 636

Qy   758 GAAGAAGAGCTATCTGGGCAATATATGTGTCGCAGGAGAACCGATGAGCTTGTTGATG 817
         | |||| |||| |||||||| |||||||||||| | |||| || | |||||||||||
Db   637 GAAGAAGGGCTATCTGGGCAATATATGTGTGCAGAAGAACAGATGAACTTGTTGATG 696

Qy   818 GCCCTAATGCATCCCACATAACTCCGCAAGCTTTAGATAGTGGGAGACCAGGCTGGAAG 877
         |||||||| || | |||||| ||||| | ||||||||||||||| |||||| |||||
Db   697 GCCCAAACGCATCATATATTACCCCGGCAGCCTTAGATAGGTGGGAAAATAGGCTAGAAG 756

Qy   878 ATATTTCAGTGGCGCGGCCCATTTGATATGCTTGATATGCTGCTTTATCCGATACTGTCTCCA 937
         || || ||||||| ||||| ||||||||||||||| || ||||||||| | |||||||
Db   757 ATGTTTTCAATGGGCGGGCCCATTTGACATGCTCGATGGTGCTTGTCCGATACAGTTTCTA 816

Qy   938 GATTCCTGTTGATATTCAGCCATTCAGATATGAGATATGATGAAGGAATGCGTATGGACTTGT 997
         |||| | |||||||||| || |||| ||||||||||||||||| | || ||||| |||||||
Db   817 ACTTCCCAGTTGATATTCAGCCATTCAGAGATATGATGATTGAAGGAATGCGTATGGGACTTGA 876

Qy   998 GGAAATCCAGATACAAAACTTCGATGAGCTATATCCTATTGTTACTATGTTGCTGGTA 1057
         | || |||||||||| || ||| ||||||| | ||| ||||||| ||||||||
Db   877 GAAAATCGAGATACAAAAACTTGCAGCAACTATACCTTTATTATTGTTATTGTTGCTGGTA 936

Qy 1058 CTGTAGGATTGAGTGTTCCAGTTATGGTATTGCACCTGATTCAAAGCCAACAACAG 1117
         | || | ||||||| |||||| ||||| || |||| |||||| || ||||||||
Db   937 CGGTTGGTTGATGAGTGTTCCAATTATGGGTATCGCCCCTGAATCAAAGGCAACAACAG 996

Qy 1118 AGAGTGTATATAATGCTGCTGCTTTGCCTGCAAATCAACTAACCAATATACTCA 1177
         ||| |||||| | ||||||| ||| || ||||||| ||||| || ||||| |||
Db   997 AGAGCGTATATAATGCTGCTGCTCTGGGGATCCGCAAATCAAATCAATTAACTAACTACTCA 1056

Qy 1178 GAGATGTAGGAGAAGATGCCAGAAGAGGAAGAGTATACTTGCCTCAAGATGAATTAGCAC 1237
         ||||||| |||| || ||||| |||| || ||||| ||||||||||||| |||||||||
Db 1057 GAGATGTTGGAGAGATCCAGAAGAGGAAGAGTCTACTGCCTCAAGATGAATTAGCAC 1116

Qy 1238 AGGCAGGGCTCTCCGACGAAGACATATTTGCTGGAAGAGTGACTGATAAGTGGAGGAACT 1297
         || ||| ||| |||||| ||| ||| || |||||||||| || ||| | |||||||||
Db 1117 AGGCAGTGCTCTATCCGATGAGAATATTTGCTGGAAGGGTGACCGATAAATGGAGAATCT 1176

Qy 1298 TTATGAAGAAACAAATTCAGAGGCGGCGAGGAAATTCTTTGATGAGTCAGAGAAAGGTGTCA 1357
         ||| |||| ||||| | | ||| || | |||||||| || | | ||| ||||||| |
Db 1177 TTATGAAGAAACAAATCATAGGGCAAGAAAGTTCTTTGATGAGCAGCAGAAAGGCGTGA 1236

Qy 1358 CAGAACTGGACTCTGCTAGTAGATGGCCTGTTGTTGTCAGTCAGTCCGAGAAGGAAAACC 1417
         |||| |||||| || | || | || ||||| || |||| ||||| |||| |
Db 1237 CAGAATTGAGCTCAGCTAGTAGAGTTCCCTGTATCGGGCATCCTTGGTGTCTGTACCGGCAAAA 1296

Qy 1418 TATTGGACGAGATTGAAGCCAACGACTACAACAACTTCACAAGGAGGGCTTATGTTAGCA 1477
         || | ||| |||| ||| |||| | || || || ||||| ||| | |||| |||||
Db 1297 TACTAGATGAGATTGAAGCCAATCACGACTACAACAACTTCACAAAGAGCATATGTGAGCA 1356

Qy 1478 AGCCAAAG-AAGCTTCTCACCTTGCCTATGCAAAATCTTCTGTGCCCCCTAAT 1536
         || || | || || || | | || | | |||| | ||| ||| |||| ||
Db 1357 AATCAAAGCAAGTTGATTGCATTACCTATTGCATATGCAAAATCTCTTGTGCCTCCTACA. 1416

Qy 1537 AGAACTTCCTCCCACTAGCAAAGACATGCAATGAGTAGTTCAATGAGTATTATAC 1596
         | | ||| ||| | | || || || |||| | |||| | |||| | ||| |
Db 1417 AAACTGCCTCCTCTTCAAAGATAAAGACATGAAATGAAATGATATATATATATAGC 1476

Qy 1597 ACT------AAAGAAACTCAGGTACTTGTAAATGAGATATCTTTTGCTAAATGTGTAT 1648
         || | ||||||| | | | |||| ||| | |||| ||| |||||
Db 1477 AATGTACATTAGAGAGAAAAAAAAGGAGGAAGAAAATGTTGTTGTTGATTAGATAAATGTGTATAT 1536

```
Qy  229  |||   |||  || ||| |||||||| |||||||| ||| |||||||||| ||   |||||||||       285
Db  229  CTC---CTTGTGACGTCTCAAATGGACAAGTTTCATGGAATCAGTCCGGAGGGAAACC             285

Qy  338  GCGTCTTGTATCATCCAGGTTCCTAGCTCGAGATAGGAATTTGATGTGGAATGGGAGAA           397
         ||||| |||||| ||| ||||||||| ||||              |||| |||||| ||| ||||||
Db  286  GTTTTTTGATTCATCGAGG------CATAGGAATTTGGTGTGTCCAATGAGAGAGAA             333

Qy  398  TCAAGAAAGTGGGAGACAAAGTGGAATTTGGCTCTTTAATTGCTGATCCAAGATATT            457
         |||| |  |  |||
Db  334  TCAATAGAGGT-----------                                               344

Qy  458  CATGCTTGGTGGATCAAGAACTCAGAAAAGGGAAGCACTTTCTCTGTACAGTCCAGTTTGG       517
         |||||         ||||||    ||||| |  || |||||||||| ||||  ||||| ||||
Db  345  -------GGTGGAAAGCAAACTAATAATGGACGGAAATTTTCTGTACGGTCTGCTATTT          396

Qy  518  TGGCTAGCCCAGCTGGAGAAATGACTGTGTCATCAGAGAAAAAGTGTATGATGTGGTAT         577
         ||||| || ||||||||||||| |  || |||||||||||   |  | ||||||||||| |||
Db  397  TGGCTACTCCATCTGGAGAACGGACGATGACATCGGAACACAGATGGTCTATGATGTGGTTT      456

Qy  578  TAAAGCAGGCAGCTTAGTGAAGAGGCAGCTGAGATCCGATGATTTAGAAGTGAAGC            637
         |  ||||||||||| ||||||||||| || || |||| |||||| ||||||||||||
Db  457  TGAGGCAGGCAGCCTTGGTGAAGAGCAACTACCAATGACTTAGAAGTGAAGC                516

Qy  638  CGGATATTGTTGTTGCAGAGTATTGGGCTTGAGTGGAATTTGGGCTTGAGTGGCG             697
         ||||||     ||           |||||| ||||||||||| || |||||||||| |||
Db  517  CGGATATACCTATTCCGGGAATTTGGGCTTGAGTGGCATATGAAGCATATGATTAGGTGTGGTG    576

Qy  698  AAGTATGTGCAGAGTATGCAAAGACATTTTACTTAGGACAATCAACGCCCAGAGA             757
         |||||||||||||||||||||||| |||| ||||||| ||||| ||| ||| ||||
Db  577  AAGTATGTGCAGAGTATGCAAAGACGTTTAACTTAGGAACTATGCTAATGCTAATGCTCCCGAGA   636

Qy  758  GAAGAAGCTATCTGGGCAATATATGTGGTGCAGGAGAACGATGAGCTTGTTGATG             817
         |||||||||||||||||||| ||||||||||||||||||||||||||||||||||
Db  637  GAAGAAGGCTATCTGGGCAATATATGTGGTGCAGGAGAACAGAGTGAACTTGTTGATG         696

Qy  818  GCCCTAATGCATCCCACATAACTCCGCAAGCTTTAGATAGGTGGGAGACCAGGCTGGAAG      877
         || | ||||||||| ||| ||||| ||||| ||||||||| |||||||||||||||||
Db  697  GCCCAAACGCATCATATATTACCCCGGCAGCCTTAGATAGGTGGGAAAATAGGCTAGAAG       756

Qy  878  ATATTTCAGTGGCGGCCATTTGATATGCTGATAGCTGATACTGTCTCCA                  937
         || ||||| |||||| ||||||| |  |||||||||| |||||||| ||
Db  757  ATGTTTCAATGGCGGCCATTTTCAATGCTGATGGTGCTTGTTGCCGATACAGTTTCTA         816

Qy  938  GATTTCCTTGTGATATTCAGCCATTCAGCCATTGAAGGATCGTATGGACTTGT             997
         ||| |||| |||||||||||||||||||||||||||||||||| |||||||| ||||||
Db  817  ACTTTCCAGTTGATATTCAGCCATTCAGCCATTGAAGAATGAAGATATGCGTATGGACTTGA      876

Qy  998  GGAAATCCAGATACAAAACTTTCGATGAGCTATATCCTCATTGTTGCTGGTA              1057
         | ||||||||||||||||||  ||||||||| || || |||||||||||||||||
Db  877  GAAATCGAGATACAAAAACTTCGCGAACAACTATACCTTTATTGTTGTTGCTGGTA          936

Qy 1058  CTGTAGGATTGATGAGTGTTCCAGTTATGGGTATTGCACCTGAATCAAAGGCAACAACAG      1117
         | ||  ||||| ||||||||||||||||| |||||  |||||||||||||||||||||||||
Db  937  CGTTGGGTTGATGAGTGTTGTTCCAATTATGGGTATCATCGCCTGAATCAACAAAGGCAACAACAG  996

Qy 1118  AGAGTGTATATAATGCTGCTCTTTAGGGCTTAGGCTGTGGGATCGCAATCAACCAATATACTCA  1177
         ||||| || |||||| || || |||||||||||||||||||||| ||| |||  |  |  ||||||
Db  997  AGAGCGTATATAATGTCTGCTTTGGCTCTGGGATCCCAAATCAAATCAAATCAAATAACTAACATACTCA 1056

Qy 1178  GAGATGTAGGAGAGATGCCAGAGAGAGAAGAAGAAGAGTAGTACTTGCCTCAAGATGAATTAGCAC  1237
         |||||||||||||||||||||||||||||||||||||| ||||||||| |||||||| |||||||
Db 1057  GAGATGTTGGAAGAGATCCCAGAGAGAGAAGAAGAGTCTACTTGCCTCAAGATGAATTAGCAC    1116

Qy 1238  AGGCAGGGCTCTCCGACGAAGACATATTTGCTGGAAGAGTGACTGATAAGTGGAGGAACT       1297
         |||||||| ||| |||||| |||||||||||||||| ||||||||| ||||| ||||| ||
Db 1117  AGGCAGGTCTATCCGATGAAGATATATTTGCTGGAAGGTGACCCATAAAATGAGAAATCT       1176

Qy 1298  TTATGAAGAAACAAATTCAGAGAGGCGAGAAATTCTTGATGAGTGCAGAGAAAGGTGTCA     1357
         |||||||||||| |||||||||||||||||| || |  ||||| || |||||||||||| |
Db 1177  TTATGAAGAAACAAATACATAGGGCAAGAAGTTCTTGATGAGGCGAGCAAGGCCTGA       1236

Qy 1358  CAGAACTGGACTCTGCTAGTAGATGGCCTGTGTTAACAGCGCTGCTGTTGTATCCGAAGA     1417
         ||||||||||| || ||| |||||||||||| ||   | |||||||||||||||||||| |
Db 1237  ...
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Query Match       48.7%;   Score 842;   DB 1;   Length 1646;
Best Local Similarity 74.3%;   Pred. No. 1e-231;
Matches 1222;   Conservative 0;   Mismatches 330;   Indels 92;   Gaps 9;

Qy  101  TATAATCGTTGAAATTAGTGATAGACTCTAGTGGATATCTAC--AAGTATTGGTTTTT    157
         || | |||  |||     |  |  ||||||| |||||||   ||  ||||||
Db   53  TAATTTTGTTTGAGAGTGGAAATATTCTCTAGTGGGATCTACTAGGAGTAATTTATTTT     112

Qy  158  TGATAAAATAGGCTGAGGTGAGAAGTAAACATAAGGAAAAGACAAAAACTTGGGAATTGT   217
         | || |  ||||| ||||  |||| ||| | | ||||| |||||||| |||||||||||
Db  113  CTATAAACTAAGTAAAGTTTGGAAGTGACA-AAAGAAAGACAAAAAATCTTGGAATTGT    171

Qy  218  TTTAGACCACCGAGGTTTCTTGTTCTTCATGAGCCATGTCGTTGCTTGTTGTTGGGTTGTTT 277
         |||||||  || |||   || |||| | |||| || || ||| |||||| || ||||||||||
Db  172  TTTAGACAACCAAGGT---TTCTTGCTCAGAATGTCTGTTGCCTTGTTGCCTTGTTATGGGTTGGGTTGTTT 228

Qy  278  CTCCCACTTCCGAGGTCTCGAATGGGACAGCAGGATTGTTGGGATTCAGTCAGGGAGGAAACC 337
         ||| | |||| |||||| |||   ||| |||||  |||||  ||  ||||| |||| |||| |
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Qy 1649  CATCAAAAGTAGATTGT---AAATTCAATATGACAATCTCTTGGTAGAAATATTTTCTCC     1704
         |||| ||| |||||||||     |||||||  |  |||||||||| |   |  |||||  ||
Db 1537  CATAAATATTAGGTTGTAGTAACATTCAATATAATTATCTCTTGTAGTTGTTGTATCTTC     1596

Qy 1705  ACACTCATCAAACCCTCAAGTGAG    1728
         || | ||| ||    | |||| |||
Db 1597  ACTTATCTCAACTCCTTTGAGAG    1620
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Db   169  CGGAAATTTCTGTACGGTCTGCTATTTGGCTACTCCATCTGGAGAACGGACGACGATGACA  228
          |||||||| ||||||||||||||||||||||||||||||||||||||||||||
Qy   550  TCAGAGAAAAGGTGTATGATGTGGTATTAAAGCAGGCAGCTTAGTGAAGAGGCAGCTG     609
          |||||||  |||||| |  ||||||||||||||||| ||| ||| ||| | ||||||
Db   229  TCGGAACAGATGGTCTATGATGTGGTTTGAGGCAGCAGCCTTGGTGAAGAGGCAACTG     288

Qy   610  AGATCTACCGATGATTAGAGAGTTGAGAGTTGTGTTGCAGGGAATTTGGGCTTG        669
          ||||||||| ||||| ||||||||||||||||||||| ||||||||||||||
Db   289  AGATCTACCAATGAGTTAGAGAGTTGAGAGTGAAGCCGGATATACCTATTCCGGGAATTTGGGCTTG  348

Qy   670  TTGAGTGAAGCATATGATCGTGTGGCGAAGTAGTGAGTCAATGAGACATTTTAC        729
          |||||||||||||||| ||| | || | |||| | || ||  |||||  |  ||
Db   349  TTGAGTGAAGCATATGATAGTGTGGCGAAGTAGTGCAGAGACGTTTAAC              408

Qy   730  TTAGGAACCAGCTAATGACCCCAGAGAGAAGAGCTATCTGGGCAATATATGTGTGG       789
          ||||| |  ||||| ||| || |||||||||||||||||||| |||||||| ||||
Db   409  TTAGGGACTCATGCTAATGACTTCCGAGAGAAGAGGGCTATCTGGGCAATATATGTATGG    468

Qy   790  TGCAGGAGAACGGATGAGCTGTCTTGTTGATGGCCCTAATGCATCCCCACATAACTCCGCAAGCT   849
          ||||||||||||||||||| ||||| |||||||||||||| | | | || ||||| |
Db   469  TGCAGAGAACCAGATGAACTTGTTGATGGCCCAAACGCATCATCATTATTACCCGCAGCC          528

Qy   850  TTAGTAGGTGGGAGACCAGGCTGGAAGATATTTCAGTGGGCGGCCATTTGATATGCTT       909
          |||||||| ||||| || ||||||||||| ||||||||||| ||||||||||||||||
Db   529  TTAGATAGGTGGGAAAAATAGGCTAGAAGATGTTTCAATGGCGGCCATTTGACATGCTC        588

Qy   910  GATGCTGCTTATCCGATACTGTCTCCGATTCCTGTTGATATTCAGCCATTCAGAGAT      969
          ||| ||||| | ||||| |||||| |||| ||||| ||||||||||||||||||||||
Db   589  GATGGTGCTTTGTCCGATACAGTTTCCGATACTTCCCAGTTGATATTCAGCCATTCAGAGAT      648

Qy   970  ATGATTGAAGGAGAATGCGTATGGACTTGTGGAAATCCAGATACAAAACTTTCGATGAGCTA   1029
          |||||||||||| |||| ||||| ||||||||||||||||||| | ||||| |  || | |
Db   649  ATGATTGAAGGAGAATGCCGTATGGACTTGAGAAAATGCGAGAACAAAAACTTCGACGAACTA      708

Qy   1030 TATCTCTATTGTACTATGTTGCTGCTGGACTGTGTAGGATGATGATGGTGTTCCAGTTATGGGT   1089
          |||  | ||||| ||||| |||  |||| ||| || ||||| |||||| ||| || |
Db   709  TACCTTATTGTTATTATGTTGCTGGTTGCTGGTTGATGAGTGTGTTCCAATTATGGGT        768

Qy   1090 ATTGCACCTGAATCAAAGGCAACAACAGAGTGTATATAAGCTGCTTTGGCTTTAGGG       1149
          || || | ||| |||||||||||||||||||||||| |||||| || ||| |
Db   769  ATCGCCCCTGAATCAAAGGCAACAACAGAGCGTATATAATGCTGCTTGCTCGCTTGGGG       828

Qy   1150 CTTGCAAATCAACTAACCAATATACTCAGAGATGTAGGAGAAGATGCCAGAAGGAGGAGA    1209
          | |||||| | ||| |||||||||||||||||||||| ||||||||||||||||||||||
Db   829  ATCGCAAATCAATTAACTAACATACTCAGAGATGTTGGAGAAGATGCCAGAAGGAGGAAGA       888

Qy   1210 GTATACTTGCCTCAAGATGAATTAGCACAGGCGCTCTCCGAGCTCTGCCGATGAAGACATATATTTGCT   1269
          |||||||||||||||||||||||||||||| || ||||| ||| |||||||| ||||||||||||||||
Db   889  GTCTACTTGCCTCAAGATGAATTAGCACAGGCGGTCTATCCGATGAAGAAGATATATTTGCT       948

Qy   1270 GGAAGAGTGACTGATAAGTGGAGGAACTTTATGAAGAACAAATTCAGAGGGGCGAGGAAA   1329
          |||||||||||||||||||||||||||||| |||||||||||||||||||||||| ||
Db   949  GGAAGGGTGACCGATAAATGGAGGAATCTTTATGAAGAACAAATACATAGGGCGAAGAAAG      1008

Qy   1330 TTCTTTGATGAGTCAGAGAAAGGTGTCACAGAACGTCTCGAGGTCCGAATGGGACACAGGA   1389
          ||||||||||||||||||||||||||| || | |||||||| ||||| ||||| |||||||
Db   1009 TTCTTTGATGAGGCAGAGAAAGGGCGTGACAGAACAGAATTGAGCTCAGCTGACTCCGTGTA      1068

Qy   1390 TTAACAGCGCTGCTGTTGTGTATCGCAAGATATTGGACGAGGATTGAAGCCAACGACTACAAC   1449
          || | |||| ||||||||||||||||||||||||||||| ||||||||||||||||||||||||
Db   1069 TGGGCATCTTTGGTCTTTGTGTACCGCAAAATATCTAGATGAGATTGAAGCCAATGACTACAAC      1128

Qy   1450 AACTTCACAAGGAGGGCTTATGTTAGCAAGCCAAAGAAGGTGGAATTTT        1509
          |||||| |||| |||||||||| ||||||| |||||| |||||||||||
Db   1129 AACTTCACAAGAGGAGCACTATGTGAGCAAATCAAAGAAGGTTGATTCATTACCTATTGCA       1188

Qy   1510 TATGCAAAATCTTGTGCCCCCTAATACGAACTTCCTCTTCCACTAGCAA          1559
          ||||||||||||||||||| | || ||||| ||||||||||||||||| ||
Db   1189 TATGCAAAATCTTGTGCCTCCTACAAAAACTGCCTCTCTTCAAAGATA              1238

RESULT 7
US-08-579-667-3
```

RESULT 6
US-09-180-342-2
; Sequence 2, Application US/09180342A
; Patent No. 6239331
; GENERAL INFORMATION:
;   APPLICANT: Drake, Caroline R.
;   APPLICANT: Bird, Colin R.
;   APPLICANT: Schuch, Wolfgang W.
;   TITLE OF INVENTION: Enhancement of Gene Expression
;   FILE REFERENCE: SEE50156
;   CURRENT APPLICATION NUMBER: US/09/180,342A
;   CURRENT FILING DATE: 1998-11-05
;   EARLIER APPLICATION NUMBER: PCT/GB97/01414
;   EARLIER FILING DATE: 1997-05-23
;   EARLIER APPLICATION NUMBER: UK 9611981.3
;   EARLIER FILING DATE: 1996-06-07
;   NUMBER OF SEQ ID NOS: 3
;   SOFTWARE: PatentIn Ver. 2.0
; SEQ ID NO 2
;   LENGTH: 1239
;   TYPE: DNA
;   ORGANISM: Lycopersicon esculentum
US-09-180-342-2

Query Match   46.9%; Score 811.2; DB 4; Length 1239;
Best Local Similarity 79.0%; Pred. No. 6.2e-223;
Matches 1035; Conservative 0; Mismatches 203; Indels 72; Gaps 3;

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Qy   250  ATGTCTGTTGCTTTGTGTGGTTGTTCTCCCACTTCCGAGGTCTCGAATGGGACAGGA      309
          |||||||||| ||||| |||||||||||  |    || ||||||| ||||||||
Db     1  ATGTCTGTTGCCTGTTGTATGGGTTGTTCTC---CTTGTGACGTCTCAAATGGGACAAGT     57

Qy   310  TTGTTGGATTCAGTCCGAGAAGGAAGCGCGTCTTTGTATCATCCAGGTTCCTAGCTCGA    369
          ||||||||| ||| |||| ||| || ||||| | ||| | ||||||||| |||||| |||
Db    58  TTCATGGAATCAGTCGCGGGAGGGAGAACCGTTTTTTTGGATTCATCGAG------------  105

Qy   370  GATAGGAATTGATGTGGAATCCAAGATATTCATGCTTGGGTGGATCAAGAACTGAAGGGA    429
          ||||||| |||| |||| |||| ||||| |||||| ||| |||| ||||||| ||||||||
Db   106  CATAGGAATTGGTGTCCAATGAGAGAATCAATAGAGGT----------------          144

Qy   430  GGCTCTTTAATTGCTATACAGTCCAGTTTGGTGGCTAGCCCAGCTGGAGAAATGACTGTCA   489
          || | |||||  |||| |  ||||    ||   || || ||||| ||||||||||| |||
Db   145  -------------------------------------GGTGAAAGCAAACTAATAATGGA     168

Qy   490  AGCACTTTCTCTGTACAGTCCAGTTTGGTGGCTAGCCCAGCTGGAGAAATGACTGTGTCA   549
          |  |||||| | |||||||  || ||||| ||||  |||  |||||||||||||||||
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; Sequence 3, Application US/08579667
; Patent No. 5705624
; GENERAL INFORMATION:
; APPLICANT: Fitzmaurice, Wayne P.
; APPLICANT: Hellmann, Gary M.
; APPLICANT: Grill, Laurence K.
; APPLICANT: Kumagai, Monto H.
; APPLICANT: Della-Cioppa, Guy R.
; TITLE OF INVENTION: DNA SEQUENCES ENCODING ENZYMES USEFUL IN
; TITLE OF INVENTION: PHYTOENE BIOSYNTHESIS
; NUMBER OF SEQUENCES: 19
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: Virginia C. Bennett
; STREET: 1211 East Morehead Street, PO Drawer 34009
; CITY: Charlotte
; STATE: No. 5705624th Carolina
; COUNTRY: USA
; ZIP: 28234
; COMPUTER READABLE FORM:
; MEDIUM TYPE: Floppy disk
; COMPUTER: IBM PC compatible
; OPERATING SYSTEM: PC-DOS/MS-DOS
; SOFTWARE: PatentIn Release #1.0, Version #1.30
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/08/579,667
; FILING DATE:
; CLASSIFICATION: 435
; ATTORNEY/AGENT INFORMATION:
; NAME: Bennett, Virginia C.
; REGISTRATION NUMBER: 37,092
; REFERENCE/DOCKET NUMBER: 627-196
; TELECOMMUNICATION INFORMATION:
; TELEPHONE: 919-420-2200
; TELEFAX: 919-881-3175
; INFORMATION FOR SEQ ID NO: 3:
; SEQUENCE CHARACTERISTICS:
; LENGTH: 1316 base pairs
; TYPE: nucleic acid
; STRANDEDNESS: single
; TOPOLOGY: linear
; MOLECULE TYPE: cDNA
; FEATURE:
; NAME/KEY: CDS
; LOCATION: 1..1239
US-08-579-667-3
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Query Match             46.9%;  Score 811.2;  DB 1;  Length 1316;
Best Local Similarity   80.2%;  Pred. No. 6.4e-223;
Matches 1039;  Conservative    0;  Mismatches 173;  Indels  84;  Gaps   4;

Qy    250 ATGTCTGTTGCTTTGTGGGTTGGTTTCTCCCACTTCCGAGGTCTCGAATGGGACAGGA 309
          ||||||||||| ||||||||||||||| ||| |||||||||||||||||||||||||||
Db      1 ATGTCTGTTGCCTTGTTATGGGTTGTTTCAC---CTTGTGAGGTCTCAAATGGGACAGGA 57

Qy    310 TTGTTGGATTCAGTCCGAGAAGGAAACCGCGTCTCTTGTATCATCCAGGTTCCTAGCTCGA 369
          || |||||||| || |||||||||||| |||||||| || | |||||||||||||||| |
Db     58 TTCTTGGATTCAATCCGGAGGGGAAACCGGGTTTTGATTGGTCGAGG----------- 105

Qy    370 GATAGGAATTGATGTGCAATGAGAAGATATTCATGCTTGGGTGGATCAAGAACTGAAAGGA 429
          ||||||||||| |||| |||| ||| |||||| |||||||||||||||| ||||||||||
Db    106 CATAGGAATTTAGTGTGCAATGAGAGAAACAAGAGGTGTGAACAAATGTGGAATTTT 165

Qy    430 GGCTCTTTAATTGCTGATCCAAGATATTCATGCTTGGGTGGATCAAGAACTGAAAAGGGA 489
          || ||||| ||
Db    166 GGTTCTGTAA-------------------------------------------------- 175

Qy    490 AGCACTTTCTCTGTACAGTTGGTTGGCCTAGCCCAGCTCGAGAAAT--GACTGTG 546
          |||| | ||| ||||| | || |||||| || ||| |||||
Db    176 ------------AGTTCTGCTATGGTGGCTACACCCGCGGAGAAATGGCCGACGATG 219

Qy    547 TCATCAGAGAAAAAGGTGTATGATGTGGTATTAAAGCAGGCAGCTTTAGTGAAGAGGCAG 606
          ||||||| | | |||||||||||||||||||||||||||||||||||||||||||||||||
Db    220 ACATCAGAACAGATGGTTTATGATGTGGTATTGAAACAACAAGCAGCTTTAGTGAAGAGGCAG 279
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Qy    607 CTGAGATCTACCGATGATTAGAAGTGAAGCGGGATATTGTGTTCCAGGGAATTGGGC 666
          |||||||| |||||||||||||||||| ||  || | ||||||||||||||||||| ||
Db    280 TTGAGATCTACTGATGATTAGAAGTGAAGCGGGAGATCCCTCCCGGGGAATTGAGC 339

Qy    667 TTGTTGAGTGAAGCAGATATGATCGTGTGGGCGAAGTATGTGCAGAGTATGCAAAGACATT 726
          |||||||||||||||| ||||||||||||||||||||||||||||||||||||||||||||
Db    340 TTGTTGAGTGAAGCAGTATGATGAGTATGTGCAGAGTATGCGAGACATT 399

Qy    727 TACTTAGGAACCAAGCAAGCTA ||||||||||||||||||||||||||||||| 786
          ||||||||||| ||||||||
Db    400 TACTTAGGAACTATGCTAATGACTCCAGAGAGAAGAAGGGCTATTTGGGCAATATAATGTA 459

Qy    787 TGGTGCAGGAGAACCGGATGAGCTTGGTTGTTGATGGCCCTAATGCATCCCACATAACTCCCGCAA 846
          |||||||||  |||||||||||||||||||||||||||||||||||| | ||| |||
Db    460 TGGTGCAGGAGAACAGCGAACTTGTTGATGCCGGAATGCATCACATTACTCCCACAA 519

Qy    847 GCTTTAGATAGGTGGGAGACCAGGCTGGAGATATTTCAGTGGGCGGCCATTGATATG 906
          | |||||||| |||
Db    520 GCCTTAGATAGGTGGGAGAACCGGCTGGAGATGTTTCAGTGGGCGGCCATTGACATG 579

Qy    907 CTTGATGCTGCTTATCCGATACTGCTCCCAGATTCCTGTGTTGATATTCAGCCATTCAGA 966
          || ||||||| |||| |||||
Db    580 CTCGATGCTGCTTGTCCGATACTGTTTCCAAGTTTCCAGTTGATATTCAGCCGTTCAGA 639

Qy    967 GATATGATTGAAGGAATGCGTATGGACTTGTGGAAATCCAGATACAAAACTTCGATGAG 1026
          |||||||||||||||||| | | |||| | ||| |||| | |||||||||||||||||||
Db    640 GATATGATCGAAGGAATGCGTATGGACTTGAGGAAGTCGAGGATACAGAAACTTGATGAG 699

Qy   1027 CTATATCTCTATTGTTACTATGTTGCTGGTACTGTCTAGGATTGATGAGTGTTCCAGTTATG 1086
          ||||| | | | |||| |||| |||| |||||||||||||||||||||||||||
Db    700 CTATACCTATATTGTTATTACGTTGCTGGTACAGTGTGGGTTGATGAGTGTTCCAATTATG 759

Qy   1087 GGTATTGCACCTGAATCAAAGGCAACAACAGCAGAGTGTATATAAAATGGTCTGCTTGGCTTA 1146
          ||  ||||||| ||||||||||||||||||||||||||||| |||||| | |||||||||||
Db    760 GGCATCGCACCTGAATCAAAGGCAACAACAGCAGAGTGTATATAATGGTCTTGGCTTTG 819

Qy   1147 GGGCTTGCAAATCAACTAACCAATATACTCGAGATGTAGGAGATGTCGAGAAGAGGA 1206
          || | ||||||||||||||||||||||||||||| |||||||||||||||||||||||
Db    820 GGTATCGCGAATCAACTAACCAACATTCTCAGAGATGTCGGAGAAGATGCCGAGAAGAGGA 879

Qy   1207 AGAGTATACTTGCCTCAAGATGAATTAGCACAGGCAGGCTCTCCGACGAAGACATATTT 1266
          |||||||||||| |||||||||||||||||||||||||||| ||||||||||||||| |||
Db    880 AGAGTCTACTTACCTCAAGATGAATTAGCACAGGCAGGCTCTCCGACGATGACATATTT 939

Qy   1267 GCTGGAAGATGGACTGATAAGTGAGGAACTTATGAAGAACAAATTCAGAGGGCGAGG 1326
          ||||||||||||||||||||||||| ||| | ||||||||||||||||||||||||| ||
Db    940 ACTGGAAAAGTGACTGATAAATGGAGAAGCTTATGAAGAGCAATTCCAGAGGGCAAGA 999

Qy   1327 AAATTCTTTGATGAGTCAGAGAAAGTGTCACAGAGCGACTCTGCTCTAGTAGATGGCCT 1386
          || ||||| ||| |||| | |||| |||||||||||||||||||||||| ||||||||||
Db   1000 AAGTTCTTCAATGAGGCAGGAGAGAGTTACACAACTGAGCTCAGCTGACAGATGCGCCT 1059

Qy   1387 GTGTTAACAGCGCTGCTGTTGTATCGCAAGATTATTGGACGAGATTGAAGCCAACGACTAC 1446
          || || ||| |||||||||| ||||||| |||||||| |||||||||||||||||||||||
Db   1060 GTATGGGCATCTTGCTGTTGTTACCGCCAAATACTCGACGAGATCGACGAGCCAATGACTAC 1119

Qy   1447 AACAACTTCACAAGGAGGGCTTATGTGACCAAGACCAAAGAAGCTTCTCACCTTGCCCATT 1506
          ||||||||||||||||||||| ||||||||||| | |||||||||||||||||||||||
Db   1120 AACAACTTCACAAAGAGAGCTTATGTGAGCAAATCAAAGAAGCTAATTTCCTTACCTATT 1179

Qy   1507 GCTTATGCAAAATCTCTTGTGCCCCTAATAGAACT 1542
          |||||||||||||||||||||||||||| ||||||
Db   1180 GCTTATGCAAAATCTCTTGTGCCCCTACACGAGAACT 1215
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RESULT 8
US-09-180-342-1
; Sequence 1, Application US/09180342A
; Patent No. 6239331
; GENERAL INFORMATION:
; APPLICANT: Drake, Caroline R.
; APPLICANT: Bird, Colin R.
```

APPLICANT: Schuch, Wolfgang W.
TITLE OF INVENTION: Enhancement of Gene Expression
FILE REFERENCE: SBE50156
CURRENT APPLICATION NUMBER: US/09/180,342A
CURRENT FILING DATE: 1998-11-05
EARLIER APPLICATION NUMBER: PCT/GB97/01414
EARLIER FILING DATE: 1997-05-23
EARLIER APPLICATION NUMBER: UK 9611981.3
EARLIER FILING DATE: 1996-06-07
NUMBER OF SEQ ID NOS: 3
SOFTWARE: PatentIn Ver. 2.0
SEQ ID NO 1
LENGTH: 1239
TYPE: DNA
ORGANISM: Artificial Sequence
FEATURE:
OTHER INFORMATION: Description of Artificial Sequence:Synthetic DNA
US-09-180-342-1

Query Match   24.0%;   Score 415.2; DB 4;   Length 1239;
Best Local Similarity   61.6%;   Pred. No. 2.2e-109;
Matches   663; Conservative   0; Mismatches 413; Indels   0; Gaps   0;

Qy   466 GGTGGATCAAGAAACTGAAAAGGGAAGCACTTTCTCTGTACAGTCCAGTTTGGTGGCTAGC 525
          ||| || |||||||| ||||| || || ||| || |||| | |||| |||| || ||
Db   145 GGAGGTAAACAGGACAAACACGGTAGAAAGTTCTCAGTTAGATCAGCAATCCTTGCAACA 204

Qy   526 CCAGCTGGAGAAATGACTGTGTCATCAGAGAAAGGTGTGATGATGTGGTATTAAAGCAG 585
          || || || ||||| ||| || ||| |||||| || ||| || || || ||| ||
Db   205 CCTAGCGGTGAGAGAACTATGACTAGCGACGCAAATGGTGTTACGACGTCGTACTTCGTCAA 264

Qy   586 GCAGCTTTAGTGAAGAGGCAGCTGAGATCTACCGATGATTAGAAGTGAAGCCGGATATT 645
          || ||| || | ||| ||| || ||| || ||| || || || |||| ||| | |||
Db   265 GCTGCACTAGTTAAACGTCAGTTAACGTAACGAACCTAGCTGAGGTTAAACCTGACATT 324

Qy   646 GTTGTTCCAGGGAATTGGGCTTGTTGAGTGAAGCATATCGTTGTGCGAAGTATGT 705
          || || ||||| |||| || | || || || ||| |||| || ||||| ||
Db   325 CCAATACCTGGAAAACCTTGGACTTCTTTCTGAGGCTTACGACAGATGCGGAGAGGTTTGC 384

Qy   706 GCAGAGTATGCAAAGACATTTTACTTAGGAACCAAGCTAATGACCCCAGAGAGAAGAAGAA 765
          |||| ||| ||||| | |||| || || |||| |||||| || || |||| |||
Db   385 GCAGAATACGTCAAAACCTTCAATTTGGGTACCATGTTGATGACACCAGAAAGGCGTCGT 444

Qy   766 GCTATCTGGGCAATATAGTGTGTCGAGAGAACGATGAGCTTGTTGATGGCCCTAAT 825
          || || ||| ||| || || || ||| || ||| || || || || ||| |||
Db   445 GCAATATGGGCTATTTCGTTGGTGTAGGCGTACTTGAGGCGTACTGGACGGACCTAAT 504

Qy   826 GCATCCCACATAACTCCGCAAGCTTTAGATAGGTGGGAGACCAGCCTGGAAGATATTTTC 885
          || |||| |||| ||| || || ||| || || || ||| || |||| ||||| | |
Db   505 GCTAGTTACATAACACCCGCGCTCTCTGACAGATGGGAGAACCGTTGGAGGACGTGTTT 564

Qy   886 AGTGGCGGCCATTGATATGCTTGATGCTGCTTTATCCGACTACTGTCTCCAGATTTCCT 945
          || || ||| |||| ||||| | || |||| || |||| ||| || |||| ||
Db   565 AACGGCAGACCTTTCGATATGTTGGACGGAGCACTTAGTGACACTGTGAGCCAATTTCCCT 624

Qy   946 GTTGATATTCAGCCATTCAGAGATATGAGATAATGGAGAATGCCTATGGTTGGGAAATCC 1005
          | || | ||| || ||| || |||| || || ||| ||| || || || ||||| |
Db   625 GTGGACATCCAAACCTTTTCGGGACATGCATGAGAATGATCTCGAGGGCATGAATCGTGT 684

Qy   1006 AGATACAAAACTTTCGATGAGCTATATCTCTATTGTTACTATGTTGCTACTGTAGGA 1065
          || || || |||| ||| ||| ||| |||| || ||| |||| || ||| ||||
Db   685 CGTTATAAGAATTTGATGAGTTGTATTGTGTATTGTACTGCTACGTGGCCAGGAACCGTGGGC 744

Qy   1066 TTGATGAGTGTTCCAGTTATGGGTATTGCACCTGAATCAAAGCCACAACAGAGAGTGTA 1125
          || ||| | || ||| || ||| ||||| ||| | || ||||| || |||| |||
Db   745 CTTATGCAGTGCCTATCATCATGGGAATTGCACCGGAATGCTAAAGCTACTACTGAATCTGTT 804

Qy   1126 TATAATGCTGCTTTGGCTTTAGGGCTTGCAAATCAACTCAACCAATATACTCAGAGATGTA 1185
          || || || ||| ||| || ||| ||| |||| |||| |||| |||| || |||| |
Db   805 TACACCGCAGCACTAGCATTAGGTATAGCCTTAACAAATCTTACAAATATCTTGAGGGACGTG 864

Qy   1186 GGAGAAGATGCCAGGAAGAGAGGAAAGAGAAGAAGTATACTTGCCTCAAGATGAATTAGC 1245
          ||| || || ||| |||| || ||| ||||| ||||| || | |||| || || |||
Db   865 GGTGAGGACGCACGTAGGGGTCGTGTGTATCTCCACAGGACGAGCGCTCCTCAAGCTGGA 924

Qy   1246 CTCTCCGACGAAGACATATTTGCTGGAAGAGAGTGACTGATAAGTGGAGAAACTTTATGAAG 1305
          || || || ||| |||| || || ||||| ||| |||| |||| || |||||
Db   925 TTGAGTGACGAGGACACATTTCCAGGTCGTCGTGTTACAGACAAGTGGAGGATTTTCATGAAA 984

Qy   1306 AAACAAATTCAGAGGGCCAGGAAAATTCTTCTTGATGAGTCAGAGAAGGTCACAGAACTG 1365
          || || | |||| || || |||| | ||| ||| ||| ||| || || |||| ||
Db   985 AAGCAGATTCACCGTGCTGCTGCTAAATTTTCGACGAAGCTGAAAAGGGAGTTACTGAGCTT 1044

Qy   1366 GACTCTGCTAGTAGATGGCCTGTGTTAACAGCGCTGCTGTTGTATCGCAAGATATTGGAC 1425
          ||| || ||| | ||||| || || || || ||| ||| || | ||| || ||||
Db   1045 TCTAGTGCATCAAGGTTTCCAGTTGGGCCAGCCTTGCTGTCTCTATAGAAAGATTTTGGAC 1104

Qy   1426 GAGATTGAAGCCAACGACTACAACAACTTCACAAGGAGGGCTTATGTTAGCAAGCCAAAG 1485
          || | || || | ||| |||| |||| || | ||| || |||| || ||||| |||
Db   1105 GAAATCGGAGGCTAACGATTATAATAATTTACTAAACGTGCTTTCGTTTCTAAGAGCAAA 1164

Qy   1486 AAGCTTCTCACCTTGCCCATTGCTTATGCAAAATCTCTTGTGCCCCCTAATAGAAC 1541
          ||| || | ||||| || |||| ||| | || |||| ||||| || |||| |||| ||
Db   1165 AAACTTATCGCGTCTTCCAATCGCTTACGCTAAGAGCTTGGTTCCACCAACTAAGAC 1220

RESULT 9
US-08-579-667-9
; Sequence 9, Application US/08579667
; Patent No. 5705624
GENERAL INFORMATION:
APPLICANT: Fitzmaurice, Wayne P.
APPLICANT: Hellmann, Gary M.
APPLICANT: Grill, Laurence K.
APPLICANT: Kumagai, Monto H.
APPLICANT: Della-Cioppa, Guy R.
TITLE OF INVENTION: DNA SEQUENCES ENCODING ENZYMES USEFUL IN
TITLE OF INVENTION: PHYTOENE BIOSYNTHESIS
NUMBER OF SEQUENCES: 19
CORRESPONDENCE ADDRESS:
ADDRESSEE: Virginia C. Bennett
STREET: 1211 East Morehead Street, PO Drawer 34009
CITY: Charlotte
STATE: No. 5705624th Carolina
COUNTRY: USA
ZIP: 28234
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/579,667
FILING DATE:
CLASSIFICATION: 435
ATTORNEY/AGENT INFORMATION:
NAME: Bennett, Virginia C.
REGISTRATION NUMBER: 37,092
REFERENCE/DOCKET NUMBER: 627-196
TELECOMMUNICATION INFORMATION:
TELEPHONE: 919-420-2200
TELEFAX: 919-881-3175
INFORMATION FOR SEQ ID NO: 9:
SEQUENCE CHARACTERISTICS:
LENGTH: 749 base pairs
TYPE: nucleic acid
STRANDEDNESS: single
TOPOLOGY: linear
MOLECULE TYPE: cDNA
US-08-579-667-9

Query Match   10.0%;   Score 172; DB 1;   Length 749;
Best Local Similarity   65.7%;   Pred. No. 9.7e-40;
Matches 393; Conservative   0; Mismatches 110; Indels   95; Gaps   6;

Qy   109 TTGAAATTAGTGGATAGACTCTAGTGGATATCTACAAGTATCACAAGTATTGGTTTTTGATAAAATAG 168

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Db   236  TAGACTCAGTGGGAATCTACTAGGAGTATTTTTTTATTTTTTATAAATTAA  295
          ||   ||||||   |||| |  |||   ||  |   ||| ||||| |||| ||
Qy   169  GCTGAGGTGAGAAGGTAACATAA--------GGAAAGACAAAAACTTGGGAATTGTTTT  220
          ||  |||| ||||||  ||| ||         || | ||||||| | |||||||||||
Db   296  GCAGAGGAGGGAAGGAAACAGAAACAGAAACAGAAAACAAAAAAAACCTTGGAATTGTTTT  355

Qy   221  AGACCACCGAGGTTTCTTGTTTCATGAGCATGTCGTTGCTTGTTGTGGGTTGTTCTC  280
          ||| ||||||| ||| ||||| |   ||  || ||  ||  || |||||||  ||||
Db   356  AGACAACCAAGGTTTGTTGTTC---AGAATGTCGTTGCCCTTGTTATGGGTTGTTTCAC  412

Qy   281  CCACTTCCGAGGTCTCGAATGGACAGGATTGTTGGAATTCAGTCCAGGAGGAAACCGCG  340
          ||| |||||||| |||  |||| ||||  |  ||  |||||| ||| ||| |||||| |
Db   413  ---CTTGTGAGGTCTCAAATGGACAGGATTCTTGGATTCAGGAAGGAGGAGAAACCGGG  469

Qy   341  TCTTTGTATCATCCAGGTTCCTAGCTCGAGATAGGAATTGATGTGGAATGGGAGAATCA  400
          |||| || ||| || |||        |||||||  | || || ||||| ||||||||
Db   470  TTTTTGACTCGTGAGG---------CATAGGAATTTAGTGTGCAATGAGAGAGAATCA  517

Qy   401  AGAAAGGTGGGAGACAAAGGTGGAATTTTGGCTCTTTAATTGCTGATCCAAGATATTCAT  460
          |||||||  ||||| | |||||| |||||| |
Db   518  AAAGAGGTGTGAAACAAAGGTGGGAATTTTGG----------------------------  548

Qy   461  GCTTGGGTGGATCAAGAACTGAAAAGGGAGCACTTTCTCTACAGTCCAGTTGGGTGG  520
          | |||  |||  || |||  |||||||| |||||||| |||||||||||| ||||| ||
Db   549  -------------------------------TTCCGTACGGTCTGCGATGGGTGG  571

Qy   521  CTAGCCCAGTGGGAAAT---GACTGTGTCATCAGAGAAAAGGTGTATGATGTGGTAT  577
          ||| || ||||||  ||    |||| || ||| |||||| ||| ||||| |||||||
Db   572  CTACCAACGGAGAAATGGGCAGCAATGACATCAGAGAACAGAAGGTTTATGATGTGGTAT  631

Qy   578  TAAAGCAGGCAGCTTTAGTGAAGAGGCAGCTGAGATCTGAGATTTGAAGTGAAGC  637
          |||||||||||||  ||||||||| ||| |||| ||||  |||||||||||||||
Db   632  TGAAACAAGCAGCTTTAGTGAAAAGGCAGCTCGAGATCTACTGAGATTTAGAAGTGAAGC  691

Qy   638  CGGATATTGTTGTTCCAGGGAATTTGGGCTTGTTGAGTGAAGCATATGATCGTTGTGG  695
          ||||| |  |  | || |||||||||||| ||||  |||||||| ||| || |||||
Db   692  CGGAGATCCCCTCTCCCCGGGAATTTGAGCTTGTTAAGTGAAGCATATGAGTAGTGTAG  749
```

RESULT 10
US-08-232-463-14/c
; Sequence 14, Application US/08232463
; Patent No. 5670367
GENERAL INFORMATION:
  APPLICANT: DORNER, F.
  APPLICANT: SCHEIFLINGER, F.
  APPLICANT: FALKNER, F. G.
  TITLE OF INVENTION: RECOMBINANT FOWLPOX VIRUS
  NUMBER OF SEQUENCES: 52
  CORRESPONDENCE ADDRESS:
    ADDRESSEE: Foley & Lardner
    STREET: 1800 Diagonal Road, Suite 500
    CITY: Alexandria
    STATE: VA
    COUNTRY: USA
    ZIP: 22313-0299
  COMPUTER READABLE FORM:
    MEDIUM TYPE: Floppy disk
    COMPUTER: IBM PC compatible
    OPERATING SYSTEM: PC-DOS/MS-DOS
    SOFTWARE: PatentIn Release #1.0, Version #1.25
  CURRENT APPLICATION DATA:
    APPLICATION NUMBER: US/08/232,463
    FILING DATE:
    CLASSIFICATION: 435
  PRIOR APPLICATION DATA:
    APPLICATION NUMBER: US/07/935,313
    FILING DATE:
    APPLICATION NUMBER: EP 91 114 300.6
    FILING DATE: 26-AUG-1991
  ATTORNEY/AGENT INFORMATION:
    NAME: BENT, Stephen A.

REGISTRATION NUMBER: 29,768
REFERENCE/DOCKET NUMBER: 30472/114 IMMU
TELECOMUNICATION INFORMATION:
  TELEPHONE: (703)836-9300
  TELEFAX: (703)683-4109
  TELEX: 899149
INFORMATION FOR SEQ ID NO: 14:
  SEQUENCE CHARACTERISTICS:
    LENGTH: 7218 base pairs
    TYPE: nucleic acid
    STRANDEDNESS: single
    TOPOLOGY: linear
  IMMEDIATE SOURCE:
    CLONE: pTZgpt-F1s
US-08-232-463-14

Query Match   3.1%;   Score 54;   DB 1;   Length 7218;
Best Local Similarity   3.1%;   Pred. No. 2e-05;
Matches   12; Conservative 223; Mismatches 153; Indels   0; Gaps   0;

```
Qy  1093  GCACCTGAATCAAAGGCAACAACAGAGAGTGTATATAATGCTGCTTTGGCTTTAGGGCTT  1152
          |  | | |   |  | ||||||||||||||||||||||||||||||||||||||||
Db  1445  GAATTTGGTACRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRR  1386

Qy  1153  GCAAATCAACTAACCAATATACTCAGAGATGTAGGAGAAGATGCCAGGAAGGAAGAGTA  1212
          :::  : || ::::::::::::::::::::::::::::::::::::::::::::::::::
Db  1385  RRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRR  1326

Qy  1213  TACTTGCCTCAAGATGAATTAGCACAGGCAGGCTCTCCGACGAAGACATATTTGCTGGA  1272
          :::::::: :::::::::::::::::::::::::::::::::::::::::::::::::::::
Db  1325  RRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRR  1266

Qy  1273  AGAGTGACTGATAAGTGGAGGAACTTTATGAAGAAACAAATTCAGAGGGCGAGGAAATTC  1332
          ::::::::::::::::::::::::::::::::::::::::::::::::::::::::: :::
Db  1265  RRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRR  1206

Qy  1333  TTTGATGAGTCAGAGAAAGGTGTCACAGAACTGGACTCTGCTAGTAGTAGATGGCCTGTGTTA  1392
          :::::::: ::::::::::::::::::::::::::::::::::::::::::::::::::::
Db  1205  RRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRR  1146

Qy  1393  ACAGCCCTGCTGTTGTATCGCCAAGATATTGGACGAGATTGAAGCCAACGACTACAACAAC  1452
          :::: :::: ::::::::::::::::::::::::::::::::::::::::::::::::::::
Db  1145  RRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRR  1086

Qy  1453  TTCACAAGGAGGGCTTATGTTAGCAAGC  1480
          :::::::::::::::::::::::: ::::
Db  1085  RRRRRRRRRRRRRRRRRRRATCGCAAGC  1058
```

RESULT 11
US-08-260-546-10
; Sequence 10, Application US/0826054 6
; Patent No. 5922602
GENERAL INFORMATION:
  APPLICANT: Kumagai, Monto H.
  APPLICANT: della-Cioppa, Guy R.
  APPLICANT: Donson, Jonathan
  APPLICANT: Harvey, Damon A.
  TITLE OF INVENTION: The Cytoplasmic Inhibition of Gene
  TITLE OF INVENTION: Expression
  NUMBER OF SEQUENCES: 15
  CORRESPONDENCE ADDRESS:
    ADDRESSEE: Pennie & Edmonds
    STREET: 2710 Sand Hill Road
    CITY: Menlo Park
    STATE: California
    COUNTRY: U.S.A.
    ZIP: 94025
  COMPUTER READABLE FORM:
    MEDIUM TYPE: Floppy disk
    COMPUTER: IBM PC compatible
    OPERATING SYSTEM: PC-DOS/MS-DOS
    SOFTWARE: PatentIn Release #1.0, Version #1.25

Matches   75; Conservative   0; Mismatches   16; Indels   3; Gaps   1;

Qy   245 TGAGCATGTCGTTGCTTGTTGTTGTGGGTTGTTCCCACTTCCGAGGTCTCGAATGGGA 304
          | ||||||||| ||||| |||||| | |||| ||||||
Db   23 TAAATATGTCGTTGCCTTGTTATGGGTTGTTTCTC---CTTGTGACGTCTCAAATGGGA   79

Qy   305 CAGGATTGTTGGATTCAGTCCGAGAAGGAAACCG 338
          || || |||||||| || ||||||
Db   80 CAAGTTCATGGAATCAGTCCGGGAGGGAAACCG 113

RESULT 13
US-07-783-705A-11
; Sequence 11, Application US/07783705A
; Patent No. 5429939
; GENERAL INFORMATION:
;   APPLICANT: Misawa, No. 5429939hiko
;   APPLICANT: Kobayashi, Kazuo
;   APPLICANT: Nakamura, Katsumi
;   APPLICANT: Yamano, Shigeyuki
;   TITLE OF INVENTION: DNA SEQUENCES USEFUL FOR THE
;   TITLE OF INVENTION: SYNTHESIS OF CAROTENOIDS
;   NUMBER OF SEQUENCES: 18
;   CORRESPONDENCE ADDRESS:
;   ADDRESSEE: Ladas & Parry
;   STREET: 26 West 61 Street
;   CITY: New York
;   STATE: NY
;   COUNTRY: USA
;   ZIP: 10023
;   COMPUTER READABLE FORM:
;   MEDIUM TYPE: Diskette, 3.50 inch, 720Kb storage
;   COMPUTER: IBM PC compatible
;   OPERATING SYSTEM: PC-DOS/MS-DOS
;   SOFTWARE: N/A
;   CURRENT APPLICATION DATA:
;   APPLICATION NUMBER: US/07/783,705A
;   FILING DATE: 19911023
;   CLASSIFICATION: 435
;   PRIOR APPLICATION DATA:
;   APPLICATION NUMBER: JP 1-103078
;   FILING DATE: 21-APR-1989
;   APPLICATION NUMBER: JP 2-53225
;   FILING DATE: 05-MAR-1990
;   APPLICATION NUMBER: US 07/519,011
;   FILING DATE: 19-APR-1990
;   ATTORNEY/AGENT INFORMATION:
;   NAME: Schwadron, Janet I.
;   REGISTRATION NUMBER: 33,778
;   TELECOMMUNICATION INFORMATION:
;   TELEPHONE: 212-708-1935
;   TELEFAX: 212-246-5959
; INFORMATION FOR SEQ ID NO: 11:
;   SEQUENCE CHARACTERISTICS:
;   LENGTH: 891 base pairs
;   TYPE: NUCLEIC ACID
;   STRANDEDNESS: double
;   TOPOLOGY: linear
;   MOLECULE TYPE: other nucleic acid (plasmid DNA)
US-07-783-705A-11

Query Match   2.2%; Score 37.2; DB 1; Length 891;
Best Local Similarity 56.6%; Pred. No. 0.47;
Matches   69; Conservative   0; Mismatches   53; Indels   0; Gaps   0;

Qy   967 GATATGATTGAAGGAATGCGTATGGACTTGTGGAAATCCAGATACAAAACTTTCGATGAG 1026
          ||| |||| |||| |||||| |||| | ||||| |||| ||||
Db   292 GATCATCTGGAAGGCTTCGCCATGGATGTGACGGCGAAGCGCAATACAGCCAACTGGATGAT 351

Qy 1027 CTATATCTCATTGTTACTATGTTGCTGGTACTGTGGATTGATGAGTGTTCCAGTTATG 1086
          | | || || || | ||| |||
Db   352 ACGCTGCGCTATTGCTATTCACGTTGCAGGCGGTTGCGCGCTTGCAGGAGTGGCGCAAATCATG 411

; CURRENT APPLICATION DATA:
;   APPLICATION NUMBER: US/08/260,546
;   FILING DATE: 16-JUN-1994
;   CLASSIFICATION: 435
; ATTORNEY/AGENT INFORMATION:
;   NAME: Halluin, Albert P.
;   REGISTRATION NUMBER: 25,227
;   REFERENCE/DOCKET NUMBER: 8129-086-999
; TELECOMMUNICATION INFORMATION:
;   TELEPHONE: 415-854-3660
;   TELEFAX: 415-854-3694
;   TELEX: 66141 PENNIE
; INFORMATION FOR SEQ ID NO: 10:
;   SEQUENCE CHARACTERISTICS:
;   LENGTH: 114 base pairs
;   TYPE: nucleic acid
;   STRANDEDNESS: unknown
;   TOPOLOGY: unknown
;   MOLECULE TYPE: DNA (genomic)
;   FEATURE:
;   NAME/KEY: CDS
;   LOCATION: 28..114
US-08-260-546-10

Query Match   3.0%; Score 52.4; DB 2; Length 114;
Best Local Similarity 79.8%; Pred. No. 7.8e-06;
Matches   75; Conservative   0; Mismatches   16; Indels   3; Gaps   1;

Qy   245 TGAGCATGTCGTTGCTTGTTGTTGTGGGTTGTTCCCACTTCCGAGGTCTCGAATGGGA 304
          | ||||||||| ||||| |||||| | |||| ||||||
Db   23 TAAATATGTCGTTGCCTTGTTATGGGTTGTTTCTC---CTTGTGACGTCTCAAATGGGA   79

Qy   305 CAGGATTGTTGGATTCAGTCCGAGAAGGAAACCG 338
          || || |||||||| || ||||||
Db   80 CAAGTTCATGGAATCAGTCCGGGAGGGAAACCG 113

RESULT 12
US-09-436-068A-12
; Sequence 12, Application US/0943606BA
; Patent No. 6376752
; GENERAL INFORMATION:
;   APPLICANT: KUMAGAI, MONTO H.
;   APPLICANT: della-CIOPPA, GUY R.
;   APPLICANT: DONSON, JONATHAN
;   APPLICANT: HARVEY, DAMON A.
;   APPLICANT: GRILL, LAURENCE K.
;   TITLE OF INVENTION: THE CYTOPLASMIC INHIBITION OF GENE
;   TITLE OF INVENTION: EXPRESSION BY VIRAL RNA
;   FILE REFERENCE: 008010086US02
;   CURRENT APPLICATION NUMBER: US/09/436,068A
;   CURRENT FILING DATE: 1999-11-08
;   PRIOR APPLICATION NUMBER: 09/265,576
;   PRIOR FILING DATE: 1999-03-09
;   PRIOR APPLICATION NUMBER: 08/260,546
;   PRIOR FILING DATE: 1994-06-16
;   PRIOR APPLICATION NUMBER: 08/184,237
;   PRIOR FILING DATE: 1994-01-19
;   PRIOR APPLICATION NUMBER: 07/923,692
;   PRIOR FILING DATE: 1992-07-31
;   NUMBER OF SEQ ID NOS: 15
;   SOFTWARE: FastSEQ for Windows Version 3.0
; SEQ ID NO 12
;   LENGTH: 114
;   TYPE: DNA
;   ORGANISM: Tomato mosaic virus
;   FEATURE:
;   NAME/KEY: CDS
;   LOCATION: (28)...(114)
US-09-436-068A-12

Query Match   3.0%; Score 52.4; DB 4; Length 114;
Best Local Similarity 79.8%; Pred. No. 7.8e-06;

Qy 1087 GG 1088
        ||
Db   412 GG 413

RESULT 14
US-08-908-758-1
; Sequence 1, Application US/08908758
; Patent No. 6429356
; GENERAL INFORMATION:
; APPLICANT: Calgene, Inc.
; TITLE OF INVENTION: METHODS FOR PRODUCING CAROTENOID COMPOUNDS AND SPECIALTY OIL
; NUMBER OF SEQUENCES: 4
; CORRESPONDENCE ADDRESS:
;   ADDRESSEE: Calgene, Inc.
;   STREET: 1920 Fifth Street
;   CITY: Davis
;   STATE: CA
;   COUNTRY: USA
;   ZIP: 95616
; COMPUTER READABLE FORM:
;   MEDIUM TYPE: Diskette, 3.50 inch, 1.44 MB
;   COMPUTER: IBM PC
;   OPERATING SYSTEM: Windows NT 4.0
;   SOFTWARE: Microsoft Word For Windows 7.0a
; CURRENT APPLICATION DATA:
;   APPLICATION NUMBER: US/08/908,758
;   FILING DATE: 8-8-97
;   CLASSIFICATION: 800
; PRIOR APPLICATION DATA:
;   APPLICATION NUMBER: 60/024,145
;   FILING DATE: 8-9-96
; ATTORNEY/AGENT INFORMATION:
;   NAME: Donna E. Scherer
;   REGISTRATION NUMBER: 34,719
;   NAME: Carl J. Schwedler
;   REGISTRATION NUMBER: 36,924
;   REFERENCE/DOCKET NUMBER: 122-1
; TELECOMMUNICATION INFORMATION:
;   TELEPHONE: (916) 753-6313
;   TELEFAX: (916) 753-1510
; INFORMATION FOR SEQ ID NO: 1 :
; SEQUENCE CHARACTERISTICS:
;   LENGTH: 1232 base pairs
;   TYPE: nucleic acid
;   STRANDEDNESS: double
;   TOPOLOGY: linear
;   MOLECULE TYPE: cDNA to mRNA
US-08-908-758-1

Query Match   2.2%;   Score 37.2; DB 4; Length 1232;
Best Local Similarity 56.6%; Pred. No. 0.55;
Matches   69; Conservative   0; Mismatches   53; Indels   0; Gaps   0;

Qy   967 GATATGATTGAAGGAATGCGTATGGACTTGTGGAAATCCAGATACAAAACTTTCGATGAG 1026
         ||| |-|||||| ||||| | |||||||| | ||-||||| | ||||||
Db   545 GATCATCTGGAAGGCTTCGGCCATGGATGTACGCGGAAGCGGAAGCCAACTGGATGAT 604

Qy 1027 CTATATCTCTATTGTTACTATGTTGCTGGTACTGTAGGATGAGTGTTCCAGTTATG 1086
         |-||||||| ||-|||||| || ||-||||||| || |||||| || ||-|||
Db   605 ACGGCTGCGCTATTGCTATCACGTTGCAGGCGTTGTCGCCTTGATGATGGCGCAAATCATG 664

Qy 1087 GG 1088
         ||
Db   665 GG 666

RESULT 15
US-07-783-705A-13
; Sequence 13, Application US/07783705A
; Patent No. 5429939
; GENERAL INFORMATION:
; APPLICANT: Misawa, No. 5429391hiko

. APPLICANT: Kobayashi, Kazuo
. APPLICANT: Nakamura, Katsumi
. APPLICANT: Yamano, Shigeyuki
. TITLE OF INVENTION: DNA SEQUENCES USEFUL FOR THE
. TITLE OF INVENTION: SYNTHESIS OF CAROTENOIDS
. NUMBER OF SEQUENCES: 18
. CORRESPONDENCE ADDRESS:
. ADDRESSEE: Ladas & Parry
. STREET: 26 West 61 Street
. CITY: New York
. STATE: NY
. COUNTRY: USA
. ZIP: 10023
. COMPUTER READABLE FORM:
. MEDIUM TYPE: Diskette, 3.50 inch, 720Kb storage
. COMPUTER: IBM PC compatible
. OPERATING SYSTEM: PC-DOS/MS-DOS
. SOFTWARE: N/A
. CURRENT APPLICATION DATA:
. APPLICATION NUMBER: US/07/783,705A
. FILING DATE: 1991023
. CLASSIFICATION: 435
. PRIOR APPLICATION DATA:
. APPLICATION NUMBER: JP 1-103078
. FILING DATE: 21-APR-1989
. APPLICATION NUMBER: JP 2-53225
. FILING DATE: 05-MAR-1990
. APPLICATION NUMBER: US 07/519,011
. FILING DATE: 19-APR-1990
. ATTORNEY/AGENT INFORMATION:
. NAME: Schwadron, Janet I.
. REGISTRATION NUMBER: 33,778
. TELECOMMUNICATION INFORMATION:
. TELEPHONE: 212-708-1935
. TELEFAX: 212-246-5999
. INFORMATION FOR SEQ ID NO: 13:
. SEQUENCE CHARACTERISTICS:
.   LENGTH: 6918 base pairs
.   TYPE: NUCLEIC ACID
.   STRANDEDNESS: double
.   TOPOLOGY: linear
.   MOLECULE TYPE: other nucleic acid (plasmid DNA)
. ORIGINAL SOURCE:
.   ORGANISM: Erwinia uredovora
.   STRAIN: -20D3
.   CELL TYPE: unicellular organism
. FEATURE:
.   NAME/KEY: CDS
.   /gene="crt E"
.   LOCATION: 225 to 1133
.   IDENTIFICATION METHOD: by experiment
.   OTHER INFORMATION: codes for geranylgeranyl
.   OTHER INFORMATION: pyrophosphpate synthase
.   NAME/KEY: CDS
.   /gene="crt X"
.   LOCATION: 1143 to 2438
.   IDENTIFICATION METHOD: by experiment
.   OTHER INFORMATION: codes for zeaxanthin glycosilase
.   NAME/KEY: CDS
.   /gene="crt Y"
.   LOCATION: 2422 to 3570
.   IDENTIFICATION METHOD: by experiment
.   OTHER INFORMATION: codes for lycopene cyclase
.   NAME/KEY: CDS
.   /gene="crt I"
.   LOCATION: 3582 to 5060
.   IDENTIFICATION METHOD: by experiment
.   OTHER INFORMATION: codes for phytoene desaturase
.   NAME/KEY: CDS
.   /gene="crt B"
.   LOCATION: 5096 to 5986
.   IDENTIFICATION METHOD: by experiment
.   OTHER INFORMATION: codes for phytoene synthase

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;     NAME/KEY:   CDS
;     NAME/KEY:   /gene="crt z"
;     NAME/KEY:   /note="on the complementary strand"
;     LOCATION:   5925 to 6452
;     IDENTIFICATION METHOD:   by experiment
;     OTHER INFORMATION:   codes for @ @-carotene hydroxylase
;     PUBLICATION INFORMATION:
;     AUTHORS:    Misawa, No. 5429939ihiko
;     AUTHORS:    Nakagawa, Masaya
;     AUTHORS:    Kobayashi, Kazuo
;     AUTHORS:    Yamano, Shigeyuki
;     AUTHORS:    Izawa, Yuko
;     AUTHORS:    Nakamura, Katsumi
;     AUTHORS:    Harashima, Keiji
;     TITLE:      Elucidation of the Erwinia uredovora Carotenoid Biosynthesic Path
;     TITLE:      by Functional Analysis of Gene Products Expressed in Escheric
;     JOURNAL:    Journal of Bacteriology
;     VOLUME:     172
;     ISSUE:      12
;     PAGES:      6704-6712
;     DATE:       DEC-1990
US-07-783-705A-13

Query Match          2.2%;    Score 37.2;   DB 1;   Length 6918;
Best Local Similarity  56.6%;  Pred. No. 1.3;
Matches   69;  Conservative   0;   Mismatches   53;   Indels   0;   Gaps   0;

Qy    967 GATATGATTGAAGGAATGCGTAIGGACTTGTGGAAATCCAGATACAAAAACTTCGATGAG 1026
          ||| -|||||| -|||| - ||||| | -|||| | - ||||| - ||||||
Db   5387 GATCATCTGGAAGGCTTCGCCATGGATGTACGCGAAGCGCAATACAGCCAACTGATGAT 5446

Qy   1027 CTATATCTCTATTGTTACTATGTTGCTGGGTACTGTAGGATTGATGAGTGTTCCAGTTATG 1086
          ; ||||||| || | ||||| ||   ||| || ||||||| | - | - | ||| |||
Db   5447 ACGCTGCGCTATTGCTATCACGTTGCAGGCGTTGTCGGCTTGATGATGGCGCAAATCATG 5506

Qy   1087 GG 1088
          ||
Db   5507 GG 5508


Search completed: April  5, 2003, 01:52:01
Job time : 116 secs
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